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VOLUME 92 NUMBER 3

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California MEDICINE

OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION
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Volume 92 MARCH 1960 Number 3

The Number and Distribution of Physicians in California

JUSTIN J. STEIN, *M.D.*, Los Angeles

• **The ratio of physicians to general population in California has been approximately the same for many years, the influx of physicians having kept pace with the population trend.**

For many years California has licensed more physicians than any other state.

The five medical schools in this state have been increasing the number of candidates admitted to the freshman class. Attempts are being made to increase the number of medical schools in this state to seven in anticipation of the future growth and medical needs of the population.

The heaviest concentration of physicians is as always in the thickly populated areas as determined by the population physician ratio.

A study of the detailed statistics presented in this paper should be of interest to all California physicians.

OF INTEREST to all physicians in this rapidly growing state is the potential patient load per physician. In 1950, the population was 10,609,000; in 1955, 13,035,000; it is estimated to be 15,830,000 this year, and 22,090,000 is predicted for 1970.[2]

Thus far the ratio of population to physicians has remained almost constant. It is amazing how the physician and the population trend to California has remained so balanced. For example, in 1950 (Table 1), when the population of the state was 10,609,000 the number of licensed physicians practicing in the state was 15,810, a ratio of 671 to 1. In 1958 the population numbered 14,752,000 and physicians 21,641, a ratio of 682 to 1. If all the 5,730 physicians with California Medical licenses who were practicing in other states in 1950 (Table 1) had been practicing in California instead, the ratio would have been 493 to 1; and for 1958 the corresponding ratio would have been 458 to 1.

There has been no attempt to curtail the number of physicians coming into this state. Licensing reciprocity with other states is maintained. Any qualified physician who has the proper credentials and who can qualify on the basis of the professional standards as outlined in the laws relating to the practice of medicine in California can obtain a license to practice.

In Table 2, the population-to-physician ratio in each county is given for the years 1955 and 1958. The heaviest concentration of physicians was, as always, in the thickly populated areas. Again the constancy of the ratio from year to year is notable.

More licenses to practice medicine are given in California (Table 3) than in any other state in the United States. During the past six years, approximately two thousand licenses have been issued each

The author is past president and a member of the California State Board of Medical Examiners.

Submitted November 6, 1959.

TABLE 1.—*Ratio of Doctors of Medicine to Population in California*

Year	Total Calif. Population	No. of M.D.'s in California	Population Per M.D. in California	California Licentiates in Other States	Total No. California Licentiates	Population Per Each Licensed California M.D.
1950	10,609,000	15,810	671	5,730	21,540	493
1951	11,058,000	16,242	681	6,104	22,346	495
1952	11,743,000	16,565	709	6,448	23,013	510
1953	12,168,000	17,215	707	6,919	24,134	504
1954	12,595,000	18,135	695	7,669	25,804	488
1955	13,035,000	18,984	687	8,406	27,390	476
1956*	13,594,000					
1957	14,190,000	20,710	685	9,693	30,403	467
1958	14,752,000	21,641	682	10,577	32,218	458

*Information not available to fill blank spaces.

TABLE 2.—*Table Showing Ratio of Physicians to Population*

County	Population		Licensed Physicians, M.D.		Licensed Physicians, D.O.		Total		No. of Persons Per Physician	
	7/1/54	7/1/58	3/2/55	3/2/58	10/1/54	6/1/58	1955	1958	1955	1958
Alameda	838,900	886,800	1,458	1,570	60	51	1,518	1,621	552	547
Alpine	300	400	0	0	0	0	0	0	.....	.....
Amador	9,100	9,000	4	4	3	4	7	8	1,300	1,125
Butte	68,200	73,700	80	93	8	11	88	104	786	709
Calaveras	9,800	9,400	5	5	5	5	10	10	980	940
Colusa	11,800	11,600	4	5	6	7	10	12	1,180	967
Contra Costa	335,200	370,400	338	422	9	8	347	430	966	861
Del Norte	14,600	19,100	6	8	1	1	7	9	2,087	2,122
El Dorado	18,300	21,700	11	13	1	2	12	15	1,525	1,447
Fresno	300,200	344,400	319	355	29	40	348	395	862	872
Glenn	16,800	16,900	13	13	1	0	14	13	1,200	1,300
Humboldt	87,600	96,900	76	84	3	1	79	85	1,108	1,140
Imperial	68,000	70,800	57	61	3	1	60	62	1,133	1,142
Inyo	12,200	11,000	13	9	2	1	15	10	813	1,100
Kern	262,800	279,400	229	263	20	20	249	283	1,055	987
Kings	48,100	47,800	31	39	2	1	33	40	1,457	1,195
Lake	11,300	12,100	11	11	0	0	11	11	1,027	1,100
Lassen	19,600	13,900	11	9	0	0	11	9	1,781	1,544
Los Angeles	4,927,300	5,791,900	8,035	8,916	1,371	1,396	9,406	10,312	523	562
Madera	38,900	39,800	26	23	1	2	27	25	1,441	1,592
Marin	100,700	136,800	249	328	4	3	253	331	398	413
Mariposa	5,300	4,200	4	4	0	0	4	4	1,325	1,050
Mendocino	49,900	52,800	47	63	1	1	48	64	1,039	825
Merced	78,000	88,400	53	59	1	1	54	60	1,444	1,473
Modoc	10,300	9,100	4	5	0	0	4	5	2,575	1,820
Mono	1,800	2,300	0	1	1	2	1	3	1,800	767
Monterey	155,500	192,200	190	244	14	12	204	256	762	751
Napa	56,700	63,500	114	141	2	1	116	142	488	447
Nevada	20,000	17,900	24	20	1	1	25	21	800	852
Orange	293,900	596,800	424	623	57	93	481	716	611	834
Placer	47,700	51,400	59	67	4	3	63	70	757	734
Plumas	13,000	11,700	14	13	0	0	14	13	928	900
Riverside	204,300	258,200	254	298	40	40	294	338	694	764
Sacramento	346,200	451,200	391	480	36	54	427	534	810	845
San Benito	14,700	15,500	12	14	0	0	12	14	1,225	1,107
San Diego	738,500	943,400	989	1,179	82	105	1,071	1,284	689	735
San Francisco	785,900	791,100	2,254	2,367	31	22	2,285	2,389	343	331
San Joaquin	228,600	241,000	220	254	18	19	238	273	960	883
San Luis Obispo	59,600	66,500	87	107	8	7	95	114	627	583
San Mateo	321,900	399,100	517	642	9	14	526	656	611	608
Santa Barbara	109,300	123,500	215	248	9	11	224	259	487	477
Santa Clara	373,200	574,800	707	887	25	16	732	903	509	637
Santa Cruz	68,300	71,200	108	117	9	12	117	129	583	552
Shasta	43,700	51,200	42	57	2	1	44	58	993	883
Sierra	2,900	2,400	2	1	2	2	4	3	725	800
Siskiyou	32,900	30,700	22	26	2	0	24	26	1,370	1,181
Solano	117,800	125,500	118	123	2	1	120	124	981	1,012
Sonoma	121,700	144,700	182	218	6	7	188	225	647	643
Stanislaus	143,900	149,700	160	187	3	2	163	189	882	792
Sutter	29,200	30,800	11	13	0	0	11	13	2,654	2,369
Tehama	20,000	22,800	15	16	1	1	16	17	1,250	1,341
Trinity	6,300	9,600	4	7	0	0	4	7	1,575	1,371
Tulare	148,600	151,200	116	133	14	18	130	151	1,143	1,001
Tuolumne	14,100	13,600	10	12	4	2	14	14	1,007	971
Ventura	141,100	175,300	162	194	20	22	182	216	775	812
Yolo	50,600	57,800	42	49	1	1	43	50	1,176	1,156
Yuba	31,200	26,600	38	42	2	1	40	43	780	619

year. During this same period, fewer than four hundred of the annual number of licentiates were graduates of California medical schools.

For the past 14 years, this state has licensed more physicians annually than has New York. The six states that usually issue the most licenses to practice medicine are California, New York, Ohio, Illinois, Pennsylvania and Texas.

The medical schools in California have increased their number of graduates. The College of Medical Evangelists was chartered under its present name in 1909; and in 1914 the first class, six students, was graduated. In 1958-1959 this college graduated 77. The present School of Medicine of the University of Southern California opened in 1928 and in 1933 graduated seven students; in 1934, 30; in 1959, 66. The University of California School of Medicine, San Francisco, recently increased the size of its freshman class to one hundred students. The University of California at Los Angeles School of Medicine had 26 students in its first graduating class, in 1955; then 46 in 1959. It is to enroll 72

TABLE 3.—*Number of Licenses to Practice Medicine Issued in California and Classification of Applicant*

Year	Graduates—Other States Reciprocity	Nat'l. Board Recipients	Government Credentials	Graduates California Schools Written Exams	Graduates—Other States Written Exams	Foreign Graduates	California Total No. Licensed	No. Licensed in New York
1940	177	30	5	194	151	39	596	
1941	200	32	6	206	160	34	638	
1942	223	48	12	238	157	44	722	
1943	319	55	8	242	208	16	848	
1944	405	72	9	336	167	12	1,001	
1945	599	98	11	281	187	17	1,193	
1946	1,289	247	70	321	209	16	2,152	1,513
1947	1,032	246	55	285	219	23	1,860	1,645
1948	1,017	225	31	280	240	15	1,808	1,385
1949	776	214	36	248	244	34	1,552	1,452
1950	567	233	39	270	228	49	1,386	1,161
1951	627	230	21	253	171	77	1,379	1,107
1952	777	316	39	245	209	107	1,693	1,292
1953	1,007	397	27	300	186	103	2,020	1,348
1954	1,003	438	30	267	161	101	2,000	1,498
1955	990	405	21	292	186	142	2,036	1,367
1956	782	453	17	293	123	133	1,801	1,355
1957	995	580	22	281	145	131	2,154	1,375
1958	1,038	618	21	263	168	151	2,259	1,584

TABLE 4.—*Number of Students in Each of the Four Classes of the School of Medicine of the College of Medical Evangelists During the Ten-Year Period 1949-1958 (W. E. Macpherson[4])*

	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Freshmen	97	97	97	96	96	97	96	96	96	96
Sophomores	99	96	93	95	91	99	98	84	82	91
Juniors	82	100	94	93	90	92	101	97	93	86
Seniors	81	82	100	93	92	92	85	98	97	80
Graduates	81	81	100	93	92	92	84	98	96	77

Geographical Distribution of Entering Freshman Students During the Above Ten-Year Period

Ala.	Ariz.	Ark.	Cal.	Colo.	Conn.	Del.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kas.	Ky.	La.
2	5	7	301	18	2	1	20	1	12	11	13	10	11	3	6
Me.	**Md.**	**Mass.**	**Mich.**	**Minn.**	**Mo.**	**Mont.**	**Neb.**	**Nev.**	**N.H.**	**N.J.**	**N.M.**	**N.Y.**	**N.C.**	**N.D.**	**Ohio**
2	32	17	41	12	7	5	17	2	2	6	4	25	7	5	21
Okla.	**Ore.**	**Pa.**	**R.I.**	**S.D.**	**Tenn.**	**Tex.**	**Utah**	**Va.**	**Wash.**	**W.Va.**	**Wisc.**	**Alaska**	**Canada**	**Hawaii**	**Misc. Foreign**
12	35	11	1	6	11	20	3	6	72	1	9	1	34	16	98

There were a total of 964 freshman students admitted during this ten-year period, 301 or 31.2 per cent of whom were from California.

TABLE 5.—*University of Southern California School of Medicine—Number of Students and Graduates for the Past 10 Years (C. G. Loosli[5])*

	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Freshmen	64	68	67	67	69	69	69	68	68	69	68
Sophomores	65	63	67	66	68	69	66	66	68	62	62
Juniors	61	67	65	68	71	69	69	69	68	61	64
Seniors	60	67	66	67	72	69	67	68	68	60	66
Graduates	59	67	66	67	72	69	67	68	67	60	66

TABLE 6.—*Data on Enrollment and Graduation, University of Southern California School of Medicine (C. G. Loosli[5]).*

Year	No. Grad.	Freshmen from California	Per Cent	No. from Other States	Out-of-State Distribution of Freshmen*
1949	59	41	66 2/3	23	Washington, Georgia, Nevada (5), New Mexico (5), New York (3), Florida, Louisiana, Illinois, Michigan, Missouri, South Dakota, Ohio (5), Connecticut, Utah, Idaho, Wisconsin, Nebraska
1950	67	59	83 1/3	9	Wyoming, Florida, Kentucky, Massachusetts, North Carolina, Texas, New Mexico, Arizona (5)
1951	66	63	94	4	Nevada (5), New Mexico, Arizona
1952	67	55	82		No information. Suggest consulting the Education number of JAMA.
1953	72	66	90	3	Arizona, Utah, Illinois
1954	69	62	89	7	Wyoming, Texas, Arizona, Pennsylvania, Utah, Ohio, Maryland
1955	67				No information on home states.
1956	68	28	66 2/3	40	New York (5), Michigan (5), Connecticut, Colorado, West Virginia, Wyoming, Pennsylvania, Arizona, Massachusetts (5), New Jersey (4), Illinois (3), Wisconsin, North Dakota, Minnesota, Nebraska, Arkansas, Ohio (4), Utah (5), Oklahoma (5), Kansas (5), Washington (5), Italy, Palestine
1957	67				No information on home states.
1958	60	65	93	4	Minnesota, Nevada, New York, Arizona
1959	66				No information on home states.

*No breakdown is available on geographical distributions of graduating seniors. The distribution of freshmen may be considered indicative.

TABLE 7.[1]—*Data on Enrollment, University of California School of Medicine, San Francisco*

	1950	1951	1952	1953	1954	1955	1956	1957	1958
Freshmen	72	71	76	76	76	76	78	78	101
Sophomores	72	71	76	76	73	80	76	81	74
Juniors	73	72	77	81	79	76	84	81	83
Seniors	71	66	73	74	79	79	74	83	80
Total	288	280	302	307	307	311	312	323	338

Data on Make-up of Freshman Classes 1954-1958

ENTERING FRESHMEN

	1954	1955	1956	1957	1958
California	76	75	77	74	97
Out-of-State	?	1 (Ariz.)	0	2 (1 Idaho) (1 N. Mex.)	4 (3 Ariz.) (1 Wisc.)
Foreign	0	0	1 (Syria)	2 (1 Korea) (1 Indonesia)	0
Women	3	9	7	6	10

TABLE 8.[6]—*Data on Enrollment, University of California at Los Angeles School of Medicine*

	1951	1952	1953	1954	1955	1956	1957	1958	1959
Freshmen	28	32	32	50	50	50	50	56	57
Sophomores	....	30	30	32	48	47	50	54	58
Juniors	....	....	27	36	33	48	46	50	50
Seniors	....	....	....	27	36	31	47	47	50
Total	28	62	89	145	167	176	193	207	215
Graduates	....	....	....	....	26	36	30	47	46

Data on Make-up of Freshman Classes 1951-1959

ENTERING FRESHMEN

	1951	1952	1953	1954	1955	1956	1957	1958	1959
California	27	32	32	32	29	48	47	49	52
Out-of-State		0	0	0	3 (2 Ariz.) (1 Mich.)	2 (1 Ariz.) (1 Idaho)	2 (1 Hawaii) (1 Utah)	5 (4 Ariz.) (1 N.Mex.)	4 (3 Ariz.) (1 Ore.)
Foreign	1	0	0	0	0	0	1 (Hong Kong)	1 (Lebanon)	1 (Iran)
Women	2	3	2	2	2	4	2	8	4

TABLE 9.—*Source of Successful Candidates from Other States for Reciprocity Licensure in California*

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Alabama	2	1	1	2	0	2	1	0	4	2	2	1	3	4
Alaska	1	0	0	1	0	0	0	0	1	0	0	0	1	0
Arizona	3	5	2	3	2	0	4	3	11	2	4	1	3	7
Arkansas	4	4	5	7	6	7	4	7	7	12	8	4	3	5
Colorado	12	18	15	20	10	7	24	14	13	14	27	22	32	21
Connecticut	3	4	2	0	2	4	3	2	6	4	3	1	2	3
Delaware	0	0	0	3	0	0	1	1	0	0	1	0	1	3
Dist. of Columbia	4	1	0	0	1	1	3	2	2	7	9	2	5	2
Florida	3	5	4	6	3	3	6	4	3	5	4	4	8	12
Georgia	5	16	7	11	7	1	3	5	8	8	9	9	12	22
Hawaii	0	1	2	2	5	6	2	9	5	5	11	4	3	2
Idaho	2	1	2	1	1	2	1	3	0	1	5	2	4	1
Illinois	108	225	200	211	141	101	98	117	165	145	129	105	136	119
Indiana	16	33	18	34	28	14	27	42	35	36	40	29	37	30
Iowa	6	24	15	14	19	16	7	12	30	38	40	18	22	34
Kansas	15	42	30	23	20	18	7	23	32	22	29	24	23	35
Kentucky	8	19	14	13	11	11	6	18	20	22	15	19	23	9
Louisiana	10	30	18	19	16	12	18	28	28	26	20	14	19	25
Maine	1	3	1	5	0	2	2	2	2	2	1	0	3	3
Maryland	21	34	20	25	27	11	23	19	33	23	25	36	36	39
Massachusetts	3	6	6	5	2	3	2	2	2	3	4	5	5	4
Michigan	38	97	62	77	47	36	40	36	57	63	47	58	72	83
Minnesota	38	72	90	76	60	39	55	61	71	96	70	61	62	70
Mississippi	4	1	3	3	6	2	2	0	2	4	5	3	2	5
Missouri	24	54	33	46	35	22	24	41	59	56	68	56	69	86
Montana	4	1	1	0	2	1	0	3	0	1	4	0	2	2
Nebraska	16	51	33	31	36	12	17	22	34	31	36	17	34	29
Nevada	1	2	0	2	1	1	0	1	0	1	0	0	0	1
New Hampshire	0	0	1	1	0	1	1	2	2	1	0	0	0	1
New Jersey	9	13	12	9	11	6	10	7	11	10	7	2	3	7
New Mexico	0	0	0	0	0	1	0	0	0	0	0	1	1	0
New York	67	133	103	88	68	41	41	30	37	30	29	23	29	41
North Carolina	2	6	7	5	6	2	3	2	4	9	15	7	7	16
North Dakota	1	5	0	1	3	2	3	3	1	2	6	1	8	9
Ohio	45	99	75	67	49	42	49	70	78	61	81	75	99	65
Oklahoma	7	14	11	6	10	10	8	10	15	10	14	9	13	16
Oregon	12	13	10	9	8	9	11	11	19	19	20	27	19	17
Pennsylvania	34	84	83	73	53	38	36	35	49	68	46	30	51	56
Rhode Island	2	3	3	0	0	2	1	0	1	2	0	0	1	1
South Carolina	1	2	2	2	1	3	1	1	2	2	7	5	1	4
South Dakota	1	4	2	1	2	2	2	3	2	4	2	1	6	3
Tennessee	9	43	34	21	12	16	14	16	24	29	26	17	22	21
Texas	11	16	20	17	11	14	15	32	29	38	31	24	31	37
Utah	5	3	8	9	4	10	8	11	11	12	14	9	15	7
Vermont	0	2	0	1	1	2	2	6	2	2	1	3	1	1
Virginia	6	16	14	11	5	7	7	5	13	23	14	9	16	12
Washington	15	25	9	24	16	6	12	14	19	15	27	17	18	21
West Virginia	3	7	4	2	2	1	3	3	4	7	2	2	1	3
Wisconsin	14	51	41	31	29	19	20	34	44	30	33	22	31	44
Wyoming	0	0	0	0	0	0	0	0	1	1	0	3	0	0
	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958

medical students in the freshman class in 1960, and eventually will enroll a hundred students in each freshman class.

Data on the size of the medical student body in California's medical schools and on the number of graduates is given in Tables 4, 5, 6, 7 and 8. (At the time this information was asked, Stanford University School of Medicine was in the process of moving to a new campus and no data were available.)

In Table 9 are shown the states in which successful candidates for reciprocity license received their original medical education.

Acknowledgment is made with thanks to Mr. Wallace Thompson, executive secretary, California State Board of Medical Examiners for his help in compiling statistics.

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Carcinoma in Situ of the Uterine Cervix — Diagnosis by Biopsy

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• **In 50 cases of carcinoma in situ of the cervix uteri, the lesion was present in the cervical canal in 36 instances, but the squamous epithelium of the portio was involved in only 14 cases. Since single biopsy from the portio or external os may show no malignant change even in cases in which vaginal smears are positive for cancer, single biopsy is indicated only in the presence of gross suspicious lesions.**

When positive smears have been obtained, cold-knife cone biopsy is indicated (a) whenever gross lesions are not visible on the ectocervix, (b) if carcinoma in situ is found in a biopsy of the external os, in order to determine the presence or absence of invasion, and (c) when there are repeated positive smears and biopsy of the portio has not shown the presence of malignancy.

The technique of cone biopsy is given in detail.

THE MICROSCOPIC examination of small pieces of tissue from the cervix uteri was introduced by Carl Ruge in 1878 as the "only possibility of certain recognition of cancer." Biopsy still remains the most reliable method for positive diagnosis, but with the widespread acceptance of cytologic smears and the recognition of very early stages of carcinoma it appears that the indications for this procedure should be revised. In our experience a simple biopsy specimen taken from the portio often proves negative even though smears may be positive for cancer, and it then becomes necessary to perform a more extensive operation (cone biopsy) to demonstrate the existing lesion. The present report is based on the histologic study of 50 specimens of carcinoma in situ of the cervix in order to determine the most common site for this disease and to try to define the indications for biopsy of the portio and for cold-knife cone biopsy.

SITE OF LESIONS

Although it is generally accepted that cervical carcinoma most often begins at the "squamocolumnar junction," the disease is still regarded by many authorities as one that primarily involves the squamous epithelium of the portio. Younge and co-workers,[10,11] emphasized that in over 90 per cent of instances of carcinoma in situ, the cervix is abnormal, the abnormalities consisting of conditions described as erosion, eversion, ectropion and laceration. They recommended taking biopsy specimens from the external os at the six and twelve o'clock positions. Foote and Stewart[4] found that of 27 cases of carcinoma in situ ten were situated on the portio vaginalis, 14 on both the portio and within the cervical canal, but only three limited to the canal. Held[5] reported that only 2.5 per cent of in situ lesions were situated in the canal. Przybora and Plutowa[7] in a study of 100 cases noted that in only two were the lesions located "almost entirely" within the canal and in only three on the portio, while the remainder involved the external os and extended either over the portio or upwards into the canal, or involved both those areas.

The subject is controversial, however, other investigators having stated that in most cases the lesion originates within the cervical canal. Carson and Gall[1] in their study of a considerable number of specimens found that preinvasive carcinoma originated in the canal in every instance and only in two cases extended to the portio. Marsh[6] analyzed 83 specimens of complete cervices and found carcinoma on the squamous side of the squamocolumnar junction in two cases, on the columnar side in 35 cases, on both sides in three cases, and the location not determinable in 43 cases. Fennell[2] in a study of 118 cases found that the endocervical (gland-bearing) portion was involved in all cases, with extension to the portio in only 22 per cent. Thornton and co-workers[9] described an involvement of the endocervix or endocervical glands in 193 of 200 specimens, while in six the lesion was located in both the squamous and endocervical epithelia and in only one case in the squamous epithelium.

The details of the present series of 50 cases of carcinoma in situ will be reported later, but the material consisted of 42 specimens obtained by cone biopsy and eight by hysterectomy. The location of the carcinoma in situ was noted as involving (1) the squamous epithelium of the portio, (2) the

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Supported by a research grant (C-4524) from the National Cancer Institute, United States Public Health Service.

Submitted November 20, 1959.

columnar epithelium of the cervical canal, or (3) the *transitional zone*, a site (described previously[3]) that corresponds to the "squamocolumnar junction." It is an area 1.0 cm. or less in width in the lower part of the cervical canal at the upper extremity of the squamous epithelium. The data on the sites, given in Table 1, show that in this series carcinoma in situ occurred much more frequently in the cervical canal than on the portio. If the transitional zone is considered as part of the cervical canal, the lesion involved this area in 36 cases and was present on the portio in only 14 cases.

TABLE 1.—Location of carcinoma in situ of the cervix uteri

Location	No. of Cases
Portio vaginalis:	
Portio alone	2
Transitional zone and portio	3
Cervical canal:	
Transitional zone	17
Columnar epithelium (canal)	4
Transitional zone and canal	12
Portio, canal, and transitional zone	9
Canal, transitional zone, and "dysplasia" of portio epithelium	3
	50

INDICATIONS FOR BIOPSY

It is difficult to reconcile the contradictory findings in the two groups of investigators, those in one contending that most often carcinoma in situ occurs in the squamous epithelium of the portio while those in the other claim that the most frequent origin is the transitional zone and the columnar epithelium of the canal. The differences are so pronounced as to indicate the studies must have been of series in which the material itself was different in some particular characteristic. It is doubtful that the variation can be explained solely by the microscopic criteria for this kind of malignant lesion, although a great variability notoriously occurs in the evaluation of it by different pathologists. The difference more likely rests on the type of clinical material, and it seems probable that involvement of the portio is evidence of a more advanced disease which has originated in the canal. The distribution of the sites of involvement in the present series lends support to this belief.

The transitional zone must receive the first consideration in any biopsy examination. This area sometimes is visible just within the external os and especially in the gaping opening of the multiparous cervix, but often it lies 0.5 to 1.0 cm. up in the canal and cannot be reached for excision of a single specimen with knife or punch. The practice of obtaining single specimens at specified points in the circumference of the os has been successfully employed by many gynecologists, but this method can miss a small early lesion. The procedure of "curetting" the cervical canal is less than satisfactory because the irregularity of the grooves and rugae cause skipping and often the pieces of tissue are too small for proper study. It likewise gives no information as to the possible existence of invasion.

The only method for getting material that can give information regarding the whole circumference of the os as well as the canal and the portio is cold-knife cone procedure. However, this procedure requires hospitalization and the need for considerable operative skill by the surgeon as well as a thorough examination of the specimen by a pathologist. Secondary sequelae such as hemorrhage and cervical stenosis also must be considered. Hence the procedure should be used only under certain definite conditions, and the indications for it, as well as those for single biopsy, must be clearly understood. These indications appear quite definite *in any case in which vaginal smears are positive for cancer.*

1. A single (or multiple) biopsy with knife or punch from the region of the external os is the procedure of choice whenever there is a gross lesion visible on speculum or colposcopic examination. The term *gross lesion* as here used means not only ulcerations and papillary excrescences associated with cancerous growths, but all abnormalities described under such terms as *erosion, ectropion* and *eversion.* In spite of the benign appearance of such lesions they often harbor a malignant focus, and multiple biopsy (for example, four-quadrant biopsy) may be rewarding. The application of Schiller's iodine may be helpful in determining the most favorable regions for taking the material. Whenever an invasive carcinoma is demonstrated by this type of examination the diagnosis is established and the method of treatment can be selected.

2. The indications for cone biopsy, however, are more specific and it can be said that this operation should be conducted under the following conditions:

(a) Positive vaginal smears in the absence of gross abnormalities of the cervix. A carcinoma in situ often can be demonstrated in spite of the fact that the cervix appears entirely normal.

(b) The presence of a carcinoma in situ is demonstrated in single or multiple biopsy of the portio. In such cases, cone biopsy is essential because of the possibility of invasive cancer high in the cervical canal. (We have seen three instances of invasive cancer of the cervix with only in situ lesions on the portio. It also may be noted that in three cases of this series carcinoma in situ was present in the canal but only "dysplasic" lesions on the portio.)

(c) Repeated positive smears even though portio biopsies do not show the presence of malignant disease.

TECHNIQUE OF CONE BIOPSY

The operation of cold-knife conization is conducted in the hospital under anesthesia, for which pentothal sodium given intravenously is very satisfactory. The surgical preparation of the vagina is done with great care and with minimal swabbing or rubbing of the operative field lest some of the surface epithelium be dislodged. The cervix is exposed with right-angled retractors and drawn down with tenacula which are placed to the side far from the region of the external os. It is not necessary to use any special scalpel or instrument; a straight knife and scissors are adequate. It is very important that there should be no preliminary instrumentation of the cervical canal, although at times a fine probe may be inserted into the canal and left in place as a guide during the operation. A circular incision encompassing the external os and including any visible lesions (Figure 1, A) is made with a knife. As a rule a distance of 1.0 to 1.5 cm. from the os, which yields a cone with a base of 2.0 to 3.0 cm., is adequate. A preliminary painting with iodine as in the Schiller test may assist in delineating the boundaries of the abnormal external area for removal. The incision is carried upward and inward with knife or scissors (Figure 1, B) almost to the internal os; and this distance must be estimated from the size of the cervix and not by direct determination with a sound. At this point it becomes necessary to manipulate the tissue being removed, taking care to place the traction forceps in the cut surface, not in the mucosa. The portion of cervix removed is cone-shaped and should be from 2.0 to 3.0 cm. in length (Figure 1, C). With as little manipulation as possible it is split lengthwise in order to expose the canal and then is immersed in fixative solution, usually formalin.

Pregnancy should not stand against taking a cone biopsy, for the risk of rupturing the membranes and inducing abortion is far less than that of an overlooked invasive carcinoma. However, the procedure is more difficult because the tissues are soft, bleeding is harder to control and the incision must not be extended above the internal os.

After removal of the cone, the remaining cervical canal is dilated with Hegar dilators and curettage is performed. The bleeding in the raw area is controlled by tying or cauterizing the bleeding points. The deep defect in the cervix may be packed with oxidized cellulose or gauze and this is sufficient if the patient is to receive a radium treatment or

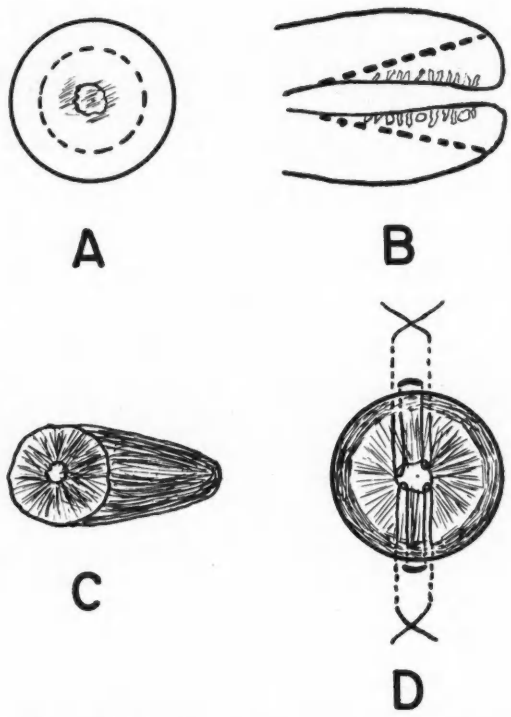

Figure 1.—Cone biopsy of cervix uteri. *A*, circular incision around external os. *B*, extent of incision upward almost to internal os and including most of cervical canal. *C*, cone. *D*, infolding of mucosa with Sturmdorf sutures.

hysterectomy in the near future. However, since it is usually impossible to make a decision at this time, it is better to cover the area with mucosa. The ectocervical mucosa is dissected back from the edge of the wound for a distance of 2.0 to 3.0 cm. and brought to the edge of the canal with an anterior and a posterior suture such as is used for a Sturmdorf repair of the cervix (Figure 1, D). To further assist in controlling the bleeding a vaginal pack is then inserted and is left in place 24 hours.

The preparation of the sections for microscopic study is important. They should be cut lengthwise 3 mm. apart and include the whole length of the specimen. As many as 6 to 20 sections are obtained to give a complete survey of the ectocervix, transitional zone and cervical canal, and include the whole thickness of the clefts (glands) as well as the deeper interstitial tissues.

The successful employment of this diagnostic procedure demands special attention to certain details which cannot be too strongly emphasized (Scott and Reagan[8]).

1. Gentle surgical preparation of the operative field.

2. Delineation of the external area for excision by the iodine (Schiller) test.

3. Avoidance of traumatization of the canal with dilators, sounds, special instruments or curette prior to cold-knife conization.

4. Avoidance of instrumental trauma to epithelial areas of the removed cone.

5. Dilatation of the remaining cervical canal and curettement of the uterine cavity after the conization.

6. Careful control of bleeding points and inversion of the mucosal fold into the defect caused by the removal of the cone.

7. Proper preparation of multiple blocks of tissue for microscopic examination.

SEQUELAE

Hemorrhage is the first complication that must be anticipated, but it does not often occur and usually can be controlled by a tight vaginal pack. Of more concern is profuse bleeding setting in ten days, more or less, after the operation. In either case, if it is not controlled by pressure packs the patient may have to be returned to the operating room. There, under anesthesia, the vaginal mucosa is dissected away from the uterus as in a cystocele repair and sutures are inserted on each side of the cervix to ligate the descending branches of the uterine artery. Fortunately so radical a step is rarely necessary, but there is on record one instance of continued bleeding necessitating total hysterectomy.

If hysterectomy or radiotherapy is decided upon, it is advisable to proceed with these measures within three or four days. The defect caused by excising the cone is readily infected, and although antibiotics are very useful the presence of an acute infection obviously renders further treatment more hazardous. If it is not possible to undertake further operations within this short time it is better to wait a month for complete healing.

In instances in which no malignant change is demonstrated and further treatment is deferred, it is wise to see the patient once a week for two months after the operation and to dilate the cervix with small Hegar dilators. Stricture of the cervical canal is a frequent complication, especially if the vaginal mucosa has not been turned in with a Sturmdorf suture. If the cone does not extend above the level of the internal os, this operation does not contraindicate future pregnancies and there is apparently no reason to anticipate a greater incidence of abortion.

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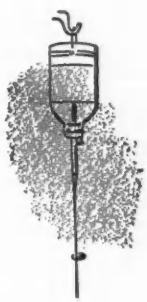

Radiation: Registration of Sources

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• **Registration of sources of ionizing radiation, including x-ray machines and radioactive material used in the healing professions, is required by legislation recently enacted in California. Registration will provide information concerning the type and location of sources of radiation, and will provide a basis for the evaluation of a need for additional radiation control and protection measures in the future.**

As the medical uses of radiation procedures constitute a major portion of the total radiation exposure to the total population, it becomes increasingly important that physicians develop a reasonable and knowledgeable concept of not only the obvious benefits but also the actual and potential hazards of radiation as used in medicine. Practical and effective measures to minimize patient exposure, based on professional knowledge, competence and experience, with profession-wide participation and support, will insure the effective integration of the medical uses of radiation in the California Atomic Energy Development and Radiation Protection Program.

THE CALIFORNIA STATE Department of Public Health has been and will be actively concerned and involved in any radiation protection activities within the State, in that the Department has general responsibility and broad authority under the Health and Safety Code to protect the public health and safety. It also has the authority to investigate any conditions or circumstances which might affect the public health. Until recently, having no legislative directive for a broader one, the Department had been carrying on a limited radiation protection program. The activities included a limited environmental monitoring program to measure and evaluate the extent of radioactive fallout, the listing and distribution to other state agencies of Atomic Energy Commission (AEC) licenses in the State, limited studies of the extent of employee and general population exposure incident to the industrial uses of radiation, the evaluation of the use of radioactive tracers in studies such as stream and ground water measurements, and, on occasion, consultation to medical, dental and industrial users of radiation-producing machines and radioactive materials.

The Department's activities with regard to radiation protection were expanded in 1959 with the provision of a budget for additional personnel and equipment principally to expand the program of detection and evaluation of contamination of the environmental air, water, food and soil incident to radioactive fallout.

The California State Legislature in the 1959 session passed a bill which added Chapter 7.5 to Division 20 of the Health and Safety Code. This chapter is titled "California Atomic Energy Development and Radiation Protection Law."

Article 2 of the chapter is a declaration of policy:

25710. The Legislature finds and declares that the peacetime uses of atomic energy and radiation can be instrumental in improving the health, welfare and economic productivity of the people of the State of California if properly utilized, and may be hazardous to the health and safety of the public if carelessly or excessively employed. It is therefore declared to be the policy of the State to:

(a) Encourage the constructive development of industries producing or utilizing atomic energy and radiation and to eliminate unnecessary exposure of the public to ionizing radiation.

(b) Have state agencies retain their traditional jurisdictions wherever possible.

Submitted November 16, 1959.

(c) Have various departments and agencies of the State which are concerned with atomic energy and radiation and its various applications develop programs designed to protect the people of the State from unnecessary exposure to radiation.

(d) Assure the coordination of the programs of the state agencies and the laws, rules and regulations incident thereto and to insure the coordination of these activities with the development and regulatory activities of local agencies, other states and the Government of the United States, including the Atomic Energy Commission.

Article 4 establishes in the Office of the Governor the position of Coordinator of Atomic Energy Development and Radiation Protection, and sets forth his duties and responsibilities. In general terms, the legislation directs that the Coordinator shall, with respect to atomic energy development and radiation protection, serve as advisor to the Governor, perform the liaison function between the state and federal governments, coordinate the programs and rules and regulations of state, city, and county agencies, keep the Governor and various state, city and county agencies informed and enlist their cooperation in protecting the health, safety and general welfare of the people of the State, and disseminate to the public factual data and information and interpretations thereof. The legislation further directs that the Coordinator shall submit a report to the Governor and the Legislature not later than ten calendar days following the commencement of each regular session of

the Legislature, recommending such action or legislation as he deems necessary or desirable, and shall submit his first report to the Governor and the Legislature at the 1961 regular session, including but not limited to information and recommendations on:

(a) The environmental monitoring and surveillance program of the State relating to radiation.

(b) The adequacy of the radiological laboratory facilities of the State necessary for discharging the duties and performing the service required by state agencies, whether or not there should be a centrally located laboratory facility to service all state agencies, and if so where it should be located administratively, or whether it would be feasible for the State to contract with private organizations for any needed technical laboratory work.

(c) The need for a program for the inspection of sources of radiation within the State.

The Coordinator may consult with and seek the advice of technically qualified persons within and without the State to advise on matters relating to atomic energy and radiation protection, particularly with regard to rules, regulations and safety standards relating to radiation usage and exposure.

Alexander Grendon has been appointed and is serving as Coordinator in the office of the Governor at Sacramento.

Article 5 establishes in the State government the Departmental Coordinating Committee on Atomic Energy Development and Radiation Protection which shall consist of the Coordinator as chairman and the heads of the appropriate and interested state departments and agencies. The committee shall assist in the coordination and development of programs and activities pertaining to atomic energy development and radiation protection, and shall report thereon to the Governor.

Article 6 establishes in the State government an Advisory Council on Atomic Energy Development and Radiation Protection, consisting of the Coordinator and nine members appointed by the Governor, one each from industry, labor, medicine, education, science and technology, agriculture, insurance, city government and county government. The council shall evaluate the programs of the several state departments and agencies and advise and make recommendations to the Governor bearing on the development of state policy in the field of atomic energy development and radiation protection.

Article 7 makes it unlawful for any person to manufacture, construct, produce, transfer, acquire, use or possess any of the materials or facilities for which a permit or license is required under the provision of the Atomic Energy Act of 1954 (Public Law 85-256), unless he shall have first obtained such license. It also requires the State Department of Public Health to keep current information on the permits and licenses issued by the United States Atomic Energy Commission in the State, and to transmit such information to the Coordinator and, upon request, to any state department or agency or member of the public.

Article 8 entitled "Registration of Sources of Radiation" is quoted directly as follows:

25780. Any person possessing a source of radiation shall register with the Department of Public Health pursuant to rules and regulations which shall be promulgated by the Board of Public Health and shall give such information relating to such source of radiation as shall be required by such rules and regulations on forms to be prescribed by the Board of Public Health and furnished by the department. Violation of this section is a misdemeanor.

25781. The information obtained by registrations under Section 25780 shall be transmitted by the department to the Coordinator of Atomic Energy Development and Radiation Protection and shall be made available to state departments and agencies, city and county governments, and the public.

Assembly Bill 1403 became effective on September 18, 1959. The State Department of Public Health is now actively engaged in developing the rules, regulations and forms for registration of sources of ionizing radiation in consultation with professional societies and activities and other state and local agencies for consideration by the State Board of Public Health. It is estimated that these will not be adopted or available for distribution for several months. When available, the regulations and forms will be distributed through proper channels. As registration applies to all sources of ionizing radiation, all physicians and allied professional users of diagnostic and therapeutic x-ray machines and radium, and most AEC licensees who use by-product material for diagnosis and treatment must register. Registration will also apply to industrial and commercial users.

With the implementation of the new California Atomic Energy Development and Radiation Protection Law, the activities and responsibilities of the Department will be greatly expanded. The Department will be concerned with the public health aspects of ionizing radiation from all sources including natural background, the environmental contamination incident to fallout, nuclear power installations, radioactive waste disposal and occupational exposure. The Department will also be concerned with the public health aspect of the patient exposure incident to uses in diagnosis and therapy.

The somatic hazard to the individual and the genetic hazard to the future population as a whole from any source or amount of ionizing radiation is generally acknowledged. It is generally believed that the genetic hazard is the more significant. The amount of genetically significant radiation contributed by medical exposure of patients is most difficult to measure or estimate, but it is generally agreed that medical uses contribute an amount equal to the natural background dose and that radioactive fall-

out and occupational exposure in radiation industries each contributes less than 5 per cent of the dose from either medical uses or natural background. It is apparent that the medical exposure of patients is potentially of major importance. It is generally agreed that the amount thus received can be significantly lowered by reasonable and practical measures without in any manner decreasing the obvious benefits to patients and society as a whole. This can be accomplished by profession-wide recognition of the actual or potential hazards of radiation, by the use of good equipment and good practice, and by limitation of the numbers and types of procedures to the actual demands of the medical situation.

The registration of sources of ionizing radiation with the State Department of Public Health will serve primarily as a source of information concerning the number, types and locations of sources. The registrant "shall give such information relating to such source of radiation as shall be required by such rules and regulations on forms to be prescribed by the Board of Public Health and furnished by the Department." Information concerning the extent and status of any radiation control measures currently employed by each registrant at the time of registration would be of great future value in evaluating the need for any expansion of the present radiation protection program of state and local government agencies, to include standards of equipment, shielding, etc. Such information might include data concerning the use of filters and collimating devices to minimize patient exposure, and the use of protective screens, primary shielding in walls and individual monitoring devices. Information of this type would be of value to the state agencies and the Coordinator in the required future recommendations to the Governor and the Legislature concerning the need for a program for the inspection of sources of ionizing radiation within the State.

The Division of Industrial Safety of the California State Department of Industrial Relations administers and enforces laws and safety orders relating to the life and safety of workers in places of employment, including the hazards of ionizing radiation to employees. These orders do not apply to patients, but do apply to those employees of physicians and hospitals who might be exposed to potentially injurious levels of ionizing radiation. The safety orders pertaining to the hazards of radioactivity and ionizing radiation to employees are published as Title 8, Group 6, Article 53, California Administrative Code. These safety orders, adopted in 1950 and amended in 1955, establish minimum standards for protection of employees, and specify maximum permissible exposure limits for employees. The safety orders establish requirements in protective measures such as the monitoring of workrooms where radioactive material is handled, and the inspection and survey of radiation-producing equipment.

The Atomic Energy Commission has published regulations which establish general standards for protection of licensees, their employees and the general public against radiation hazards arising out of the possession or use of special nuclear material (source or by-product) under license issued by the Atomic Energy Commission. Physicians licensed by the AEC must comply with the regulations and are subject to inspections and enforcement provisions.

The National Bureau of Standards handbooks relating to radiation, particularly Nos. 51, 59, 60, 69, set forth the recognized standards of radiation protection measures as they apply to equipment design, to equipment maintenance, to shielding of walls and to the maximum permissible doses for employees and for the general population outside of but in the vicinity of controlled radiation areas. The standards are published as a guide. However, most "standards" and "codes" relating to radiation protection as actually adopted by official agencies of the federal government and many states are based on and comply with the recommendations of the National Committee on Radiation Protection and Measurements. The publications listed do not apply to radiation intentionally applied to patients.

Since the question of patient exposure to radiation has come to the fore as a matter of general public and professional concern, numerous articles on the subject have appeared not only in the professional medical publications but also in allied scientific publications and in popular magazines. Many of them have attempted to evaluate the extent of any potential or actual health hazard from the careless or unnecessary use of radiation procedures. Numerous other articles, many of which have been published in radiology journals, have discussed such measures as limitation of the beam and refinement of procedure techniques as a way to reduce "unnecessary exposure of the patient." It appears to be particularly essential at this time that all members of the medical, dental and allied professions, whether prescribing, requesting or actually conducting diagnostic or therapeutic x-ray procedures be reasonably familiar with the general subject of ionizing radiation so that they may better judge whether the apparent or expected benefits of any radiation procedure will justify the recognized hazard of the procedure. Medical practice based on reasonable information and on practical scientific protective measures appears to be a prerequisite to a sound radiation control program, whether voluntary or regulatory.

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Palliation for Advanced Cancer of the Breast

Trans-Septal-Sphenoid Subtotal Hypophysectomy

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• **Subtotal hypophysectomy by the trans-septal-sphenoid approach was used for palliation in 23 cases of cancer of the breast. Of 18 patients in whom results could be evaluated, eight had palliation for various lengths of time. The other ten were not helped and four of them had complications from the operation. The average survival time for patients who were helped by the operation was longer than for those who were not.**

IN RECENT YEARS it has been amply demonstrated that the course of cancer of the breast can be modified by a change of hormonal milieu in the patient.* Of special interest was the report by Pearson and Ray of the stimulation of the tumor growth in two such cases by the administration of human growth hormone.[20]

With the advent of hypophysectomy as a palliative procedure in advanced carcinoma of the breast, it was logical to attempt this operation by the trans-septal-sphenoid approach. This is a report of the use of this operation in 23 cases. The technique, described in a previous article,[10] is basically that devised by Hirsch. Local anesthesia is used. Because of the innate limitation of the procedure, only a subtotal hypophysectomy was feasible by this approach.

CLINICAL MATERIAL AND RESULTS

Of the 23 patients treated, five should be excluded in the evaluation of results. In Case 1 (Table 1) the patient was unconscious and moribund at the time of operation. In Case 4 the operation was not completed. The patient had a very curved intersinus sphenoid partition which misled the surgeon (WEH). Removal of the postero-superior bone of the sphenoid supposedly exposed the pituitary. Fortunately, before using the cup-forceps to remove this tissue, a routine aspiration with a long needle was done and gross blood was withdrawn. The operation was stopped, without harm to the patient except for having been subjected to an extended submucous resection of the nasal septum. At autopsy a few months later it was noted that the right internal carotid artery had been exposed. As advanced hepatic metastasis was also present, hypophysectomy probably would not have helped anyway. It usually does not if liver or brain metastasis has occurred. In Case 18 an anomalous artery across the face of the pituitary prevented safe removal of hypophyseal tissue. The patient in Case 16 died of coronary occlusion a month postoperatively, and another patient (Case 17) died of a stroke a month after operation.

Supported in part by U.S.P.H.S. Grant No. CY-4195.
Submitted September 25, 1959.
*References: 1, 2, 4, 5, 16, 19, 21.

In neither case, therefore, could the effect of the procedure be adequately evaluated.

Eight of the remaining 18, we believed had subjective palliation and ten did not (Table 2). Of the eight considered helped, the shortest length of postoperative survival was three months (the patient still living at the time of this report) and the longest was 15 months. The average was at least seven and a half months, and the median was seven months.

Of the ten not considered helped, the shortest postoperative survival time was one month, the longest five months, the median two and a half months.

Relief of pain was the most dramatic feature of the palliation. One patient (Case 2, Table 1) was rapidly deteriorating from the disease. After operation she gained strength and became free of pain. Before her seven-month period of survival ended she enjoyed two vacations in resort spots, trips she could not possibly have made before operation. The patient in Case 13, a 37-year-old woman, could barely hobble using two canes before operation. Postoperatively she was able to resume the care of her home, and survived 15 months.

COMPLICATIONS

Four of the patients had complications, one case each of meningitis, chronic diabetes insipidus, chronic cerebrospinal fluid rhinorrhea and cerebrospinal rhinorrhea with pneumocephalus. In the latter case the resident surgeon, having had considerable experience in operations of this type, had attempted extensive (total if possible) removal of pituitary tissue. As a secondary operation he stopped

the cerebrospinal fluid rhinorrhea by swinging a pedicled-flap of mucosa from the nasal septum into the sphenoid. The intracranial air gradually absorbed.

DISCUSSION

A variety of surgical approaches have been used for hypophysectomy and for the insertion of radioactive materials into the pituitary.* Investigators at the Memorial Center in New York City, reporting on a large series in which complete hypophysectomy was effected by craniotomy, noted long duration of palliation and survival, and objective signs of remission.[3,20]

*References: 6, 7, 8, 9, 11, 12, 13, 14, 15, 17.

In light of evidence recently presented by Müller[18] on the "activation" of the pharyngeal hypophysis when the sellar pituitary is absent or destroyed,

TABLE 2.—*Results of Trans-Septal-Sphenoid Hypophysectomy for Palliation of Cancer of the Breast*

Total number of cases	23
Exclude Nos. 1, 4, 16, 17 and 18 (See Table 1)	5
Number of cases to evaluate	18
Palliation:	
Yes	8 (44 per cent)
No	10 (56 per cent)
Operative mortality	0
Complications:	
Meningitis	1
Chronic diabetes insipidus	1
Chronic cerebrospinal fluid rhinorrhea	1
Pneumocephalus and cerebrospinal fluid rhinorrhea	1

TABLE 1.—*Summary of 23 Cases in Which Trans-Septal-Sphenoid Subtotal Hypophysectomy Was Done for Palliation of Mammary Cancer*

Case No. Patient	Age	Length of Postoperative Survival	Palliation	Complications	Amount of Tissue Removed	Comments
1.	55	1 day	....	....	950 mg.	Moribund preoperatively; previously reported.
2.	57	7 mo.	Yes	....	Not weighed	
3.	38	5 mo.	No	....	250 mg.	Brain metastases.
4.	47	....	....	....	....	Operation interrupted; technical error.
5.	49	13 mo.	Yes	....	Not weighed	
6.	43	1 mo.	No	....	275 mg.	Extensive liver metastases.
7.	56	2 mo.	No	....	Not weighed	
8.	33	4 mo.	Yes	....	Not weighed	
9.	51	1 mo.	No	Meningitis	250 mg.	
10.	34	7 mo.	Yes	....	Not weighed	
11.	36	3 mo.	No	Chronic diabetes insipidus	185 mg.	Tremendous bowel metastases.
12.	48	5 mo.	No	Chronic cerebrospinal fluid rhinorrhea	295 mg.	
13.	37	15 mo.	Yes	....	130 mg.	
14.	33	4 mo.	No	....	Not weighed	
15.	45	2 mo.	No	....	Not weighed	
16.	67	1 mo.	Could not evaluate		795 mg.	Died coronary occlusion.
17.	59	1 mo.	Could not evaluate		505 mg.	Died of stroke; BP 210/100 mm. Hg.
18.	31	....	....	....	....	Operation interrupted; arterial anomaly.
19.	35	1 mo.	No	....	262 mg.	
20.	56	8 mo.	Yes	....	400 mg.	
21.	59	3 mo.	No	Pneumocephalus cerebrospinal fluid rhinorrhea	500 mg.	Cerebrospinal fluid leak stopped by mucosal flap.
22.	33	5 mo.	Yes	....	Not weighed	
23.	56	3 mo., living	Yes	....	150-200 mg.	

the pharyngeal hypophysis may someday be given greater consideration than it gets at present.

On microscopic examination, the surgical specimens from two of the patients in the present series were observed to contain small islands of metastatic tumor.

In an attempt to eradicate additional pituitary tissue not removed surgically, we have swabbed the interior of the cavity with Zenker's solution. The possibility of re-operation, when palliation from the primary operation appears to be ending, to remove additional or regrown tissue, has been considered but not tried.

Since the technical error which occurred in Case 4, we have routinely obtained preoperative body section roentgenograms of the base of the skull (laminagrams), to show the plane of the sphenoid intersinus partition from front to back, as an additional operative guide.

Keeping in mind the limitations of this approach, as well as the possibility of anatomic peculiarities in each patient, the surgeon ought not be too zealous in his removal of pituitary tissue.

Recently Luft[15] reported that in most of the European centers and in some in the United States a trans-antral-sphenoid approach, under general anesthesia, is being used for hypophysectomy. Apparently the exposure is sufficient to permit safe total hypophysectomy; and while the method is more formidable than the trans-septal-sphenoid approach, it is not as hazardous as craniotomy for the severely debilitated patients.

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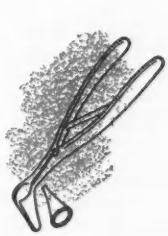

Leg Cramps

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▪ **Foot and leg cramps are among the most frequent complaints presented by patients of both sexes, especially older persons. Similar cramping may occur in the thighs or in other skeletal muscles of the extremities and trunk. Foot and leg cramps usually occur after unusual exertion or during sleep. "Nocturnal leg cramps" may be of sufficient intensity to prevent sleep. "Pregnancy cramps" are particularly distressing.**

Effective treatment of foot and leg cramps requires an understanding of the etiology, pathophysiology and diagnostic techniques. Weight reduction and improved diet are essential. Among the useful supplementary medications are calcium lactate or gluconate, vitamin-mineral supplements, sympathetic blocking agents, vasodilators, ataraxics, muscle relaxants, quinine, hydrochloride, antihistamines, and nonmercurial diuretics.

Improved foot care and correction of foot imbalance is usually required. Edema and venous insufficiency are improved by elastic support, by repeated foot elevation for massages, by manipulations and exercises and by the use of diuretics. There may be need for operations on the veins and for sclerotherapy. Patients with arterial insufficiency are often benefited by lumbar sympathetic blocks with long-acting anesthetics and intra-arterial injections with relaxants, vasodilators, thrombolytic enzymes and anticoagulants. Sympathectomy, angiography and reconstructive arterial operations are indicated in only a small proportion of patients with foot and leg cramps.

THE TERM *leg cramps* applies to involuntary tetanic contractions of the calf muscles. Such cramping may be experienced by any patient. An example is the so-called "charley horse" following stretching of a fatigued or injured extremity, or after the leg has been held in a cramped position for a time. Similar cramping may occur in the feet or in other skeletal muscles of the trunk or the extremities.

ETIOLOGIC AND PATHOPHYSIOLOGIC FEATURES

The causes of many cases of foot and leg cramps are obscure. Practically anything that interferes with nutrition and gas exchange of normally innervated skeletal muscle can cause cramps. Thus cramps are seen both in sodium intoxication and sodium depletion, in oxygen intoxication and oxygen deficiency. Cramps occur more frequently in association with certain diseases or conditions:

During or after unusual activity or muscular effort.

After retiring or during sleep following a day of much use of the legs — that is, "nocturnal leg cramps," which may be so severe that they awaken the patient or prevent sleep.

"Pregnancy leg cramps," occurring between the 24th and 36th weeks of gestation.

Disturbances of mineral metabolism, frequently related to dietary and vitamin deficiencies. (a) Hypercalcemia may produce cramps through peripheral sympathetic overactivity causing vasoconstriction. Cramps are far more commonly associated with hypocalcemia—latent tetanic states, hypoparathyroidism, sprue, rickets, renal insufficiency and alkalosis in hyperventilation syndrome. Calcium ions, which are skeletal muscle relaxants, are reduced by phosphates and in turn antagonize the relaxant effects of magnesium and postassium ions as well as the muscle stimulant effects of sodium ions. (b) Chronic low sodium diet also may lead to cramps, especially when sodium-depleting agents are being used or in association with excessive sweating.

Weakness in a neighboring muscle due to nervous system disease or to skeletal deformity.

Circulatory deficiencies, such as those occurring with atherosclerosis, vasospasm, varicose veins, or thrombophlebitis of the lower extremities. Older patients are more likely to have nocturnal cramps than are younger patients.

Spontaneous fasciculation is more frequently observed in muscles likely to cramp than in normal muscles. There appears to be a heightened excitability of the motor units involved. Even during maximal voluntary effort the motor units contract asynchronously. With even maximal voluntary contraction no pain is experienced. Pain can be elicited during electrical stimulation of the muscle or motor nerve which induces much greater muscle tension than voluntary contraction.

During voluntary contraction the normal muscle fiber has a contraction rate of 10 to 50 per second; in the myotonic muscle this rate may be higher, 100 to 150 per second. In skeletal muscle cramps, the rate of contraction of a single fiber is still higher, reaching to 300 per second.

The sensory elements and nerve fibers subserving

Submitted May 20, 1959.

the conduction of afferent impulses from the muscles which are interpreted as pain are not clearly identified. The excessive tension developed in the muscle may cause afferent impulses to arise in a manner analogous to pain production when a viscus (intestine, urinary bladder, gall bladder) is distended.

MANAGEMENT OF FOOT AND LEG CRAMPS

After adequate examination to attempt to determine specific etiological factors a multiple therapeutic routine should be instituted.

Diet

He who takes medicine and neglects diet wastes the skill of his physician.
—OLD CHINESE PROVERB

Reduce overweight. A low calory, low fat, low carbohydrate, low salt, high protein diet is essential. Saturated, hydrogenated solid fats are to be avoided. Linolenic acid, linoleic, and arachnoidic polyunsaturated fatty acids, found in cottonseed, corn, walnut, peanut, safflower and sunflower seed oils are currently popular. Varying success has been achieved with cholesterol-reducing and lipotropic agents (hyaluronic acid, sitosterols and niacin). Inhibition of cholesterol biosynthesis may prove more effective in retarding atherosclerosis.

Reduce whole milk intake. Powdered, low-fat milk and soya derivatives may be used freely. Food should be eaten slowly and chewed thoroughly.

Medications

Qui medice vivit, misere vivit.
—MEDIEVAL LATIN

Many drugs have been advocated for prevention and treatment of muscle cramps. Addictive analgesics should be avoided. Except in frank calcium deficiency, medication should be considered as palliative and supplementary.

Mineral vitamin supplements high in vitamins B, C, and D should be prescribed routinely. In pregnancy and lactation adequate calcium is necessary to replace the large amounts taken up by the fetus or lost in nursing the infant. Calcium lactate or gluconate (0.6 gm. four times a day), or Calglucon® syrup, 1 tablespoonful (3.6 gm.) at bedtime. In severe spasm, calcium gluconate given intravenously often provides prompt relief. The rationale of low phosphate intake is still debatable.

Nicotinic acid (or nicotinamide) in repeated doses or in a form that releases slowly for sustained effect produces cutaneous vasodilation and has considerable lipid-clearing action. Apparently by elevating the diphosphopyridine nucleotide concentration in the body tissues, nicotinic acid also potentiates the action of ataraxic agents.

Some muscle relaxants are effective in decreasing the frequency, duration and severity of foot and leg cramps. Among the most effective and nontoxic agents is Orphenadrine hydrochloride (Disipal®) 25 mg. twice a day or, for nocturnal cramps, 50 mg. at bedtime.

Ataraxic drugs (tranquilizers) and antihistamines may be of indirect benefit but should be used only in small doses and for short periods. The central depressant action that sometimes accompanies the use of muscle relaxants, ataraxics and antihistamines may be combatted with monoamine-oxidase inhibitors (MAOI) such as 2-dimethyl aminoethane (Deaner®), 25 mg. twice daily.

Sympathetic and adrenergic blocking and adrenolytic agents may be indicated in patients with peripheral vascular insufficiency. There is need for improved preparations with regional specificity and less hypotensive effect.

Diuretics are indicated for edema. Small doses of renal carbonic-anhydrase inhibitors (hydrochlorothiazide) are preferred for their greater selectivity in eliminating sodium rather than potassium ions.

Quinine hydrochloride has long been used but its prophylactic and therapeutic value in leg cramps has not been conclusively established. Pregnancy, tinnitus and impairment of hearing or vision are contraindications to its use.

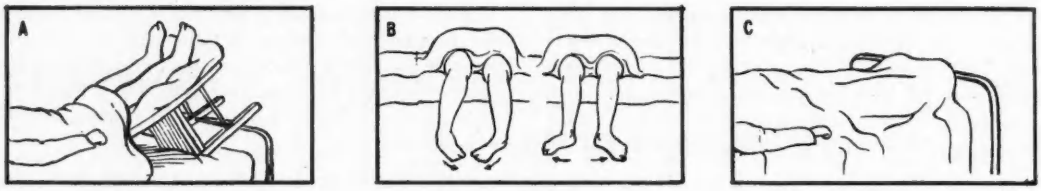
Foot Care, Physical Therapy and Other Measures

Keep your mouth wet, feet dry.
—POOR RICHARD'S ALMANAC, 1733

Foot Care. Fungus infections can be controlled by a nonirritating agent such as borotannic complex. Proper treatment of corns and calluses and clean socks and good shoes are essential. Warm soaks and contrast sprays should be taken at least twice daily. Massage with a vasodilator ointment, muscle stretching exercises and exercises against increasing resistance should be carried out many times every day.

Foot Balance. For depressed metatarsal heads insert, a ⅛-inch to 3/16-inch sponge rubber metatarsal pad. For internal rotation, a sponge rubber scaphoid "cookie" and ⅛-inch inner wedges on a Thomas heel and sole should be used. Pronounced foot imbalance requires a soft, flexible appliance, individually fitted by an expert orthopedist or podiatrist.

Physical Therapy. In the presence of vascular insufficiency, it is dangerous to use diathermy, heat lamps, ultra violet lamps, paraffin baths, ultra sound, vibrators and similar devices on the foot or leg. Careful use of sine wave, iontophoresis, rocking bed and repeated hydromassage, warm (not hot) baths and soaks and contrast sprays is encouraged. An



2 minutes 3 minutes 2 Minutes

Buerger-Allen exercises—Fields' Modification

electric pad set at low temperature applied to the buttocks in the lumbar region provides some foot and leg comfort through reflex vasodilations and reflex muscle relaxations.

Venous Insufficiency. Elastic support (bandage or stocking) and foot elevation (5 minutes every two hours) for massage, manipulations and exercises are usually of considerable benefit. With edema, low salt diet and diuretics (hydrochlorothiazide) and a continued self-care routine (Luke's "New Life"*) are essential. Sclerotherapy should be reserved for minute venules after operation. Pregnancy is usually a contraindication to sclerotherapy. Vein ligations and strippings may be indicated. The postthrombophlebitic syndrome is often benefited by some of the measures noted below for dealing with arterial insufficiency.

Arterial Insufficiency. Vascular study may indicate the need for lumbar sympathetic blocks (with long-acting local anesthetics), intra-arterial vasodilator-relaxants (methocarbamol), thrombolytic enzymes (Plasmin), oxygen and anticoagulants. Some patients require sympathectomy, angiography and reconstructive arterial surgical procedures. It is suggested that some patients with foot and leg cramps due to vasospasm, arterial or venous insufficiency and other causes will be benefited by "stunning" the lumbar sympathetic trunk with proton beams or with an insulated percutaneous electrocoagulator.

Associated Disease. Control of obesity, undernutrition, anemia, diabetes, cardiovascular-renal disorders and other systemic diseases is essential.

Foot and Leg Exercises

Those who do not find time for exercise will find time for illness.

—EARL OF DERBY, 1873

Instructions for foot and leg exercises are:

1. Exercise slowly. Relax slowly. Repeat exercises six times daily. Shorten rest periods and increase walking and exercises to a point short of severe pain.
2. After each exercise session manipulate and massage each leg and foot for five minutes with vasodilator ointment, or liniment diluted in oil. Apply dusting powders.
3. Keep off feet for five minutes every hour. If there was previous serious infection increase rest period to fifteen minutes. Do not bear weight if skin is broken or inflamed.
4. Flex and extend toes slowly to full range 1,000 times. While doing back and leg exercises continue with foot and toe movements.
5. Finish each step on toes, not on ball of foot. Take shorter steps and slower rate (90 steps per minute). If only one leg is involved, hold it stiff, throwing weight onto sound limb for longer intervals.
6. Lie flat on back. With knees stiff, elevate alternately right leg then left to 90°. At the same time do foot and toe bending. Repeat 10 times. Do bicycle exercises for 30 seconds. Repeat leg raising with a five-pound weight across foot; increase to 20 pounds for 20 elevations. Repeat lift, with knees flexed, sitting on edge of table.
7. Go swimming as often as possible. Twice daily relax in warm bath and use contrast sprays. Massage, and manipulate toes, feet, and legs while in warm bath. Hydrotherapy stimulates circulation and "tones" up tissues.
8. Buerger-Allen Exercises — Fields' Modification (see illustration):
   - Lie flat on back in bed and elevate legs to 45° for two minutes or until feet become blanched.
   - Sit on edge of bed and allow legs to hang for three minutes or until feet become pink. Move feet up and down, in and out, and open and close toes. Massage and manipulate toes, feet and lower legs.
   - Rest on back in bed for two minutes. Keep warm with blankets. Repeat exercises six times at each session six times a day.

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*Luke's "New Life" (a term introduced by Joseph Luke of Montreal) is a routine of daily living for persons with edema and postthrombophlebitis. It entails weight reduction, elastic support and repeated elevation of the legs.

Clinical Observations on Iproniazid In Idiots with Epilepsy

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• **In contradistinction to the observation made before that iproniazid has a potentiating effect on certain amines in guinea pigs, human studies have shown that this effect has very little clinical importance, when both the amines and the amine oxidase inhibitor are given in the usual therapeutic doses. However, neither in man nor in the guinea pig pretreatment with iproniazid showed a potentiating effect on amines which are not substrates of monoamine oxidase (ephedrine and amphetamine). Patients with epilepsy and allergic disease may receive iproniazid.**

THE LITERATURE on iproniazid (1-isonicotinyl, 2-isopropyl hydrazine) has established that this enzyme-inhibitor has therapeutic usefulness apparently owing to selective action on the brain. Its effect in this organ is ascribed to the blocking of amine oxidase responsible for the degradation of norepinephrine and serotonin (5-hydroxy-tryptamine). The increase of these amines in the brain is reflected in greater alertness and energy of the patient. The mechanism of the observed anabolic action of iproniazid and its appetite-stimulating effect remains to be determined.

Some theoretical contraindications could be considered while utilizing iproniazid. (a) One might hesitate to use this drug in epilepsy where it might produce convulsions as other hydrazides do. The manufacturer of iproniazid (Marsilid®) cautions against the use of the drug in epileptic persons. Pfeiffer and co-workers[3] observed that iproniazid is probably not a convulsant in man; it does not lower the threshold for photic stimulation. (b) It has been observed by the author[2] that in guinea pigs iproniazid has a potentiating effect on certain amines. One might hesitate therefore to administer this drug to patients receiving such amines. (c) Another possible consideration is speculative: by blocking of monoamine oxidase and to a lesser degree di-amine oxidase, the body level of serotonin and histamine might increase and cause ill effects in patients with allergic disorders.

The purpose of this communication is: to report on clinical observations on iproniazid as far as the above-mentioned theoretical contraindications are concerned, and to present observations on changes in the gastric juice following iproniazid administration.

MATERIALS AND METHODS

Under ideal conditions human experiments would approach in their objectivity similar experiments in animals, free from patient's motivation, his intelligence and his reaction to the placebo role of the drug. The mentally retarded patients of Pacific State Hospital were found therefore more suitable for the present investigation than persons of normal intelligence.

Submitted July 23, 1959.

Two groups of hospital patients were investigated. One was made up of bed-ridden idiotic females and the other of chair-confined idiotic males. All had epilepsy. The ages varied between 12 and 38 years. Iproniazid was administered to all of them for a four-week period in doses proportionate to body weight. The lowest dose was 30 mg. daily and the highest 150 mg. daily and the drug was usually given in two or three divided doses before meals. No change was made in whatever medication the patients were receiving before iproniazid administration was begun. It included anti-epileptic drugs which the patients had taken for years (phenobarbital, Tridione®, Diamox®, Dilantin®), vitamins and antibiotics when indicated. Two females and three males known to be severely epileptic received additionally during the iproniazid administration, 25 mg. of pyridoxine twice a day. Two male patients received 25 mg. of ephedrine three times daily within an hour following iproniazid; and three other male patients received, in a similar way, amphetamine, two of them 10 mg. three times daily and one 5 mg. three times daily. The type of food and way of administration (tube feeding in some patients) was not changed. The patients were weighed before and at the end of administration of iproniazid, and one month after it was discontinued. The gastric juice of selected patients was examined for total acidity and for free hydrochloric acid simultaneously with the weight determination. Excepting week-ends, the behavior of the patients was observed daily. Blood pressure determinations were made at the beginning and at the end of iproniazid administration. Urinalysis and routine determination of blood cell counts were performed at random and as indicated by intercurrent illness. Additionally, five mentally normal

patients in private practice receiving 50 mg. iproniazid a day while under treatment for various allergic diseases were observed for about four weeks.

RESULTS

In none of the patients was an increase in intensity or frequency of epileptic seizures observed. In some, iproniazid seemed to have a mild anticonvulsive action. The incidence of convulsions is usually reported by the technicians in charge or by nurses to the ward physician. Both the day and night personnel were aware of the fact that a new drug was used and were on the lookout for possible convulsions. None of five patients who were given sympathicomimetic drugs during iproniazid administration and none of another group of five patients not included in this study who were receiving amphetamine (to counteract the drowsiness effect of antiepileptic drugs) showed a potentiating effect of iproniazid on the amines. The criteria for evaluating the potentiating effect of iproniazid on the action of these amines were clinical observation of tachycardia, blood pressure changes and other symptoms described previously.[2] The amines were given in usual therapeutic dosages.

The effect of the drug on three female patients with rhinitis was hard to appraise, since it was administered together with Chlor-Trimeton®, which was already being given when iproniazid administration was begun. However, the addition of iproniazid did not aggravate the rhinitis. The degree of rhinitis was evaluated by observations of the quantity of secretion and degree of nasal stuffiness. In two institutionalized female patients, not in the above group, recovering from an acute attack of asthma, the addition of iproniazid in a dose 50 mg. three times daily did not aggravate the asthma. Given to five patients with allergic disease in private practice, iproniazid did not result in worsening of symptoms. One of those patients, a 70-year-old woman with Meniere's syndrome, seasonal rhinitis and dermatitis felt a definite improvement in every respect after she took iproniazid. Another patient, a 73-year-old retired newspaperman who was taking Marsilid®, had cessation of asthma, for the first time in 30 years, following the anti-asthmatic treatment. His body weight, which had remained unchanged for many years, increased 8 pounds within six weeks (from 135 to 143 pounds). Also his general well-being improved. The effects in the other three younger private patients were not so striking.

The changes in gastric acidity of patients in the female group were not very significant. But in some cases in the male group there appeared to be a rise in total gastric acidity as a result of the drug and, parallel to it, a rise of free hydrochloric acid. Although lowered after discontinuation of the drug, in the cases in which the gastric acidity had risen during iproniazid therapy, it remained quite high one month after cessation of iproniazid. Changes in the body weight in this group did not seem to be inordinately associated with the apparent changes in gastric juice.

There were no changes in blood pressure readings or in blood cell counts as a result of iproniazid administration. We had the impression that some patients, although they did not show the clear-cut anabolic effect of the drug, ate better—did not turn away the head from the spoon or stubbornly clench the jaws—and became less of a "feeding problem." Managing those patients became an easier task, since their alertness and interest in surroundings increased and therefore better communication could be achieved. They would, for example, focus their eyes on a person, or smile—which they did not do before the treatment. Following the substitution of vitamin B complex tablets for the drug, for appraisal of placebo effect, those patients who showed an increased alertness lost it again in a few weeks.

In some patients an increase in muscular activity was noted. This became striking in one patient, a 26-year-old female, a "vegetable," who had not moved for a long time. While receiving iproniazid she began to be so active that side rails had to be put on her bed to keep her from falling out.

The undesirable side effects of iproniazid noted in these patients were as follows: Insomnia in one hydrocephalic female, and diaphoresis, especially facial, in another. Rebellious attitude instead of the usual passive cooperation was observed in two male idiots. In another group of mentally deficient young boys not included in this study who received iproniazid for several months it was noted that two hyperactive, imbecile schizophrenics improved upon discontinuance of the drug. They began to eat better and appeared somewhat calmer.

DISCUSSION

It seems that Pfeiffer was right in his belief that iproniazid was probably not a convulsant in man. When administered in therapeutic doses it did not provoke or accentuate attacks in epileptic patients. Even in patients with severe epilepsy who were receiving pyridoxine, iproniazid seemed safe. The potentiating effect of iproniazid on amines seemed to have very little clinical importance when both were given in the usual therapeutic doses. Allergic disorders such as asthma, atopic rhinitis, sinusitis, dermatitis or Meniere's syndrome did not seem to be aggravated by iproniazid. In order to determine the value of iproniazid in the treatment of allergic disease, more extensive studies are necessary.

Brody[1] noted that iproniazid in a single oral or intravenous dose resulted in gastric stimulation. Nicotinic acid and its derivatives were observed to promote gastrointestinal function. Should further experiments confirm the observation that an increase in total acidity and in free hydrochloric acid results from iproniazid administration in some patients, a better understanding of gastric secretion might be gained.

One might hypothesize that the control of the production of gastric juice is located in the reticular-activating system of the brain stem, the area in which amine oxidase can be affected by such substances as its inhibitor, iproniazid. It remains to be determined which amines bring about changes in secretion of gastric juice. Should serotonin play a dominant role in this control, its action, in the present state of knowledge, has to be considered a "central" one. Udenfriend and co-workers[4] showed that the brain is the only selective site where iproniazid has the effect on endogenous serotonin. Still to be explained would be why some patients respond to iproniazid with increased gastric acidity and others do not.

CONCLUSIONS

1. In the doses indicated in the present study, iproniazid may be given to patients with epilepsy, to patients receiving sympathicomimetic amines such as ephedrine and amphetamine in usual doses, and to patients with allergic disease.

2. The physiologic effects noted following administration of iproniazid in this group of patients included: No intensification of convulsive seizures, apparent increase in free and total gastric acidity in some male patients, increased muscular activity, and little if any change in the vascular system.

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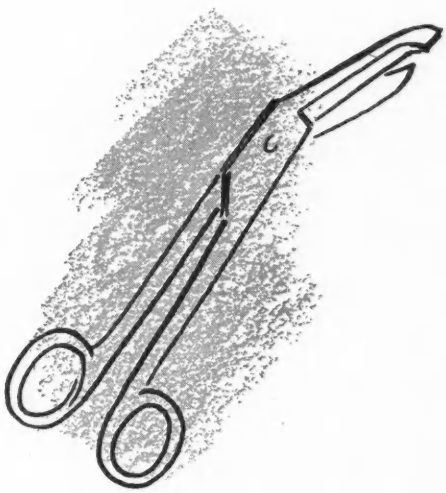

Transection of the Pancreas by Blunt Trauma

MORTON M. WOOLLEY, *M.D.*, Los Angeles, and
EUGENE J. JOERGENSON, *M.D.*, Glendale

• **If a diagnosis of traumatic pancreatitis is made and the patient does not improve clinically during the first 24 hours, transection of the pancreas should be suspected. If this is found to be the case at operation, the distal pancreas should be resected and the proximal end of the pancreas closed carefully with interrupted mattress suture of non-absorbable suture material. Particularly, the pancreatic duct should be ligated to prevent the formation of an external fistula. Any attempt at reapproximation of the transected pancreas will invariably result in an external pancreatic fistula if the patient survives the immediate postoperative period.**

TRAUMATIC PANCREATITIS can be diagnosed if the serum amylase level is found to be elevated in a patient who has sustained upper abdominal trauma.[5] If associated intra-abdominal injuries can be ruled out, the treatment for traumatic pancreatitis is the same as for non-traumatic pancreatitis. It usually responds quite well to conservative therapy. Traumatic transection of the pancreas, on the other hand, must be treated surgically. The purpose of this paper is to discuss the diagnosis and treatment of transected pancreas due to blunt abdominal trauma.

The pancreas is situated anatomically so that it can be transected by sudden severe pressure against the vertebral column. The patient may not be severely ill for the first few hours following the injury but during the ensuing 12 to 36 hours he has increasing abdominal pain and usually vomits profusely. If it can be determined that there are no other intra-abdominal injuries, if the serum amylase is elevated and if the patient is not improving on a conservative regimen, one should be suspicious of transection of the pancreas. The following case report is rather typical of this injury.

CASE 1.—A nine-year-old boy was admitted to the Los Angeles County General Hospital on April 1, 1956 at 7:30 p.m. The previous day while chasing a dog he fell on a stick he was carrying. The stick struck him in the mid-epigastrium but did not penetrate the skin. After the injury he had upper abdominal pain accompanied by transient left shoulder pain. Subsequently, he vomited on numerous occasions. Upon entering the hospital he was found to be in moderate distress but did not appear to be severely ill. The temperature, pulse, blood pressure and respirations were within normal limits. There was generalized tenderness of the abdomen, most pronounced in the left upper quadrant. The skin was intact and showed no evidence of ecchymosis. Peristalsis was normal and there was no palpable mass. The hemoglobin and the leukocyte content of the blood and the results of urinalysis were all within normal limits. No abnormalities were seen in x-ray films of the chest and abdomen. The following day the patient continued to complain of upper abdominal pain and vomited all ingested food. The left upper quadrant of the abdomen became rigid and serum amylase activity as determined at that time was 1,930 units (normal 80-150). The patient was taken to the operating room where 200 cc. of bloody fluid was found in the abdominal cavity. This fluid had an amylase activity of 30,000 units. The pancreas was observed to be completely transected at the junction of the head and body of the organ. There was a moderate amount of clotted blood in the lesser peritoneal sac, along with extensive fat necrosis. The distal segment of the pancreas was removed, leaving the spleen in place. The transected end of the pancreas was oversewn with mattress sutures of silk, care being taken to occlude the pancreatic duct completely. A drain was left in the lesser peritoneal sac.

With the exception of a transient episode of asthmatic bronchitis, the postoperative course was relatively smooth. Drainage from the wound was minimal and the wound healed *per primam*. The postoperative serum amylase and blood sugar determinations were within normal limits. The patient was discharged from the hospital on the tenth postoperative day.

When last seen some three years later he was developing quite well and had no symptoms.

DISCUSSION

Traumatic transection of the pancreas from blunt abdominal trauma is a rare injury but if not treated as outlined above, can lead to complications of long duration, if not death.[1,6,8] In reviewing the literature on this subject it is found that the most common

Submitted December 11, 1959.

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methods of therapy have been: (1) Simple drainage[3,7,8] and (2) attempt at reapproximation of the pancreatic segments.[1,4] Invariably if either of these procedures was used, external pancreatic fistulas developed in patients who survived the immediate postoperative period. In 1945, Curr[2] reported a case of transection of the pancreas in which mattress sutures were placed over both ends of the severed pancreas. (Curr did not say what kind of suture material was used.) In this case also an external pancreatic fistula developed. It lasted nine months and the patient was critically ill during that time. Eventually the fistula closed spontaneously and the patient recovered.

The exposed ends of a transected pancreas are hemorrhagic and edematous, and tend to bulge out over the pancreatic duct. Fat necrosis occurs in the surrounding tissues, making accurate suture-approximation difficult. The minute size of the pancreatic duct makes anastomosis impractical. Since distal pancreatectomy can be performed with no loss of enzymatic or hormonal elements, it is the safest procedure.

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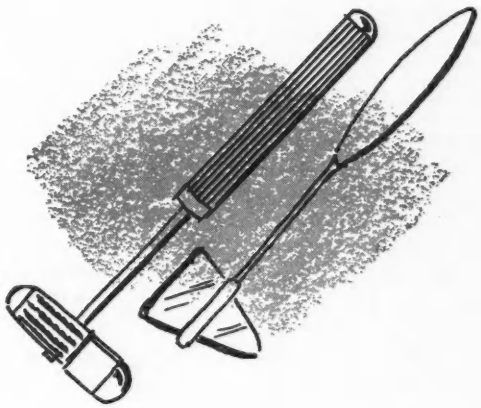

A Theory of the Genesis of Breast Duct Papilloma

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• **While it is not the intent to argue that papilloma never develops in the conventionally accepted manner (proliferative growth from the wall of a pre-existing cavity) a new, perhaps alternative, genesis is suggested. The concept is that, beginning with the usual lobular structure of the breast, first by hyperplasia and then by coalescence of alveoli, seen earliest at the periphery of the lobule, spaces appear between the content of the lobule and the wall. By confluence of these spaces a larger cystic cavity is formed. Coalescence of alveoli through the body of the central mass, in the same way as at the periphery, develops the familiar pattern of "papilloma." Following the earlier hyperplasia, regressive changes appear and may go on to complete disintegration of the papillary mass, leaving a smooth-walled cavity.**

DUCT, OR INTRACYSTIC, papilloma of the breast is generally thought of as resulting from the growth of lining epithelium and connective tissue at one or more points of the wall of a cyst or duct out into the cavity. Whether this is considered to be actually neoplastic or as only one of the bizarre manifestations of chronic cystic mastitis, it is regarded as a purely proliferative process from the pre-existing duct or cyst wall. Figure 1 illustrates in diagram the usual concept of development of papilloma.

It is the purpose of this paper to suggest that papilloma may develop in a different way and that rather than beginning in an already existing cavity, a cyst or segment of duct may be the end result. This concept, illustrated diagrammatically in Figure 2, may be stated as follows: Starting with a normal lobule (Figure 2,*A*), the gradual changes go through lobular hyperplasia, increase in number and crowding of alveoli, as in Figure 2,*B* and *C*, then the alveoli coalesce, earliest at the periphery of the lobule (Figure 2,*D*), and in coalescing create spaces between the peripheral wall and the contents of the lobule (Figure 2,*E*). Up to this point the process has been characterized essentially by hyperplasia. Regressive changes may now appear. Further coalescence of alveoli and regressive changes through the body of the lobule lead to the pattern of so-called papilloma (Figure 2,*E* and *F*). While these epithelial changes are going on, the perilobular connective tissue becomes more dense and sharply defined. The papilloma may lastly slough off or become detached in part or in whole, leaving what appears to be a smooth-walled duct or cyst lined with epithelium (Figure 2,*G*).

Evidence in support of this concept is found in the finer epithelial cell structure in the stages of hyperplasia and then of regression. The appearances indicate heightened activity during the stages of lobular hyperplasia and as alveoli coalesce and the papillary (intralobular) mass becomes separated from the peripheral wall. This picture of activity changes to one of regression, becoming more pronounced to the point of actual necrosis in smaller or larger areas, often leading to disappearance of the papilloma and leaving a smooth cavity wall.

In more detail, the various stages are as follows:

1. The structure of the normal lobule. The lobule consists of a number of alveoli which are, of course, terminal buds of the connecting duct. Each lobule is surrounded by interlobular connective tissue which connects freely with the intralobular connective tissue lying about and between the alveoli. The alveolar epithelium consists of a single layer of generally cylindrical or cuboidal cells lying on a basement membrane (Figure 2,*A* and upper left in Figure 3).

Under high power magnification, the cytoplasm of these cells is observed to be scanty. The nuclei are round or oval and, except in a very few, nucleoli and chromatin network cannot be distinguished (Figure 3, upper right).

2. The lobule becomes more cellular and the alveoli increased in number. This hyperplastic lobule is more distinctly outlined by the interlobular connective tissue (Figure 2,*B* and Figure 3, lower left).

Under high power, for the most part the epithelial cells are enlarged and there is a noticeable change in the finer structure of each cell. The nuclei show a rather vesicular character with finely granular chromatin and a distinct, prominent nucleolus. The cytoplasm appears slightly muddy (Figure 3, lower right).

3. The lobule is very cellular and the arrangement of the epithelial cells is quite irregular as compared to that in stage 2. Since the lobular change is expan-

Submitted June 29, 1959.

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Material on which this paper is based—microscopic slides from 150 breasts in all—was studied at The Royal Infirmary, Edinburgh, Scotland, at the University of Gottingen, Gottingen, Germany, and at St. Joseph's Hospital, San Francisco, California.

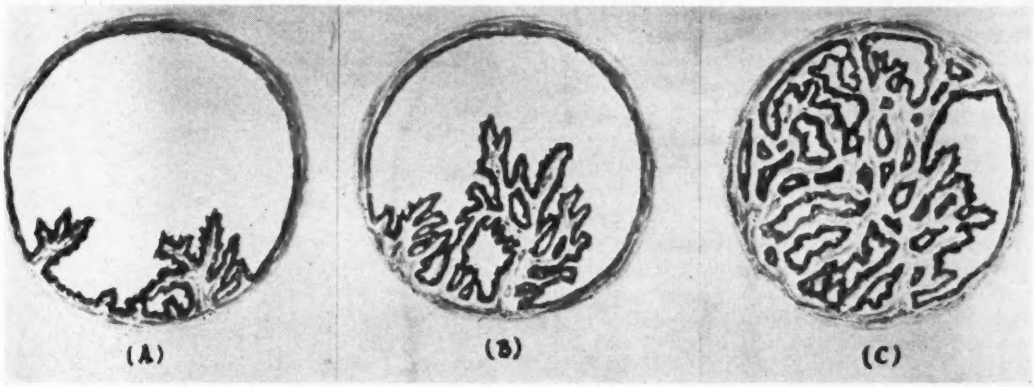

Figure 1.—Scheme of generally accepted concept of genesis of papilloma. *A*, Early proliferative growth from wall of duct or cyst. *B*, Further growth. *C*, Union of epithelium of growing mass with that of wall.

sive, the alveoli become compressed against the perilobular (interlobular) connective tissue, which has become more dense and sharply defined. Because of their decided increase in number, and often in size, they become compressed against each other. Especially packed are the alveoli at the periphery against the interlobular connective tissue. They have a tendency to become ovoid or elongated and to arrange themselves parallel to the border. At this stage hyperplastic lobules are seen here and there closely adjoining each other and even with a common connective tissue wall (Figure 2,*C* and Figure 4, upper left).

Under high power magnification the cells are in general large. The nuclei are vesicular and can be seen to have fine chromatin network. Nucleoli have become clearly visible (Figure 4, upper right).

4. The demarcation of the hyperplastic lobules from the surrounding connective tissue is distinct. The hyperplastic changes have reached their maximum. Alveoli have become confluent in many places, especially along the interlobular fibrous tissue. Often several alveoli in a row coalesce. As the alveoli increase in number and become pressed more closely together, the connective tissue between them becomes scanty. This intralobular connective tissue separating alveoli does not completely disappear even with so great compaction of alveoli as to suggest at first glance a continuous sheet of epithelial cells. Careful observation will show that the original intralobular connective tissue still persists. Early regressive changes after maximum hyperplasia may be recognizable. Small cavities develop in areas of degeneration (Figure 2,*D* and Figure 4, lower left).

Under high power magnification the cell size is in general as in stage 3. The nuclei are vesicular and have a fine chromatin network. Nucleoli are in most places distinctly seen (Figure 4, lower right).

5. In this stage the structure is already clearly that of so-called papilloma. This whole pattern is seen shortly after the stage of maximal hyperplasia. The fibrous tissue (interlobular connective tissue)

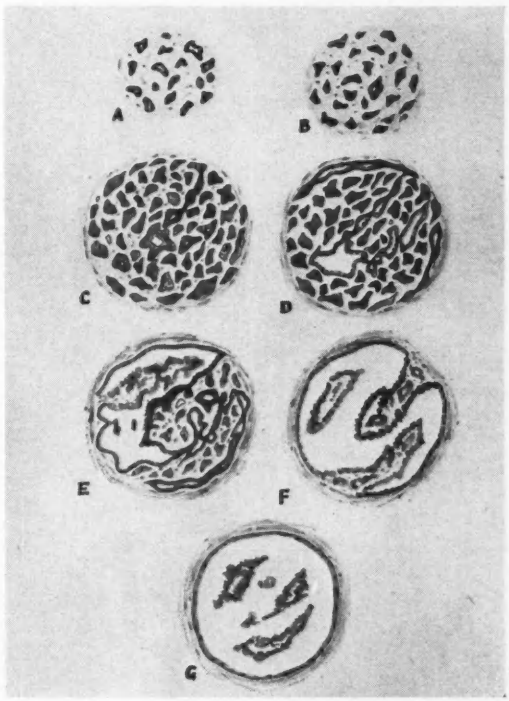

Figure 2.—Concept of development of papilloma as herein proposed. *A*, Normal lobule. *B*, Early hyperplasia. *C*, Further hyperplasia with crowding of alveoli. *D*, Coalescence of alveoli at periphery with beginning separation of central mass from wall. Early coalescence of alveoli in body of lobular mass. *E*, Further central coalescence forming pattern of papilloma. Early degenerative changes. *F*, Further regressive changes. *G*, Sloughing off of papillary masses leaving smooth-walled cavity.

which surrounds the hyperplastic lobule is better defined than in the previous stages. The separation of lobular mass from perilobular wall may now progress so far as to form a considerable cystic cavity. Many times, as in Figure 5, lower right, the shape of the surface of the retracted central mass corresponds to that of the peripheral wall across the cystic space. If the central mass were expanding by proliferation but had not yet been in contact with the wall, this correspondence of outlines would not be expected. The picture could, of course, result if the central mass had been, like a sponge, pressed against the wall without having been actually attached to it and then had pulled away by the artefact of shrinkage in fixation. But, on the other hand, it would be the expected picture if the lobular mass had been at one time continuous with the wall and had then become separated in the manner here suggested.

The cyst wall, developed by condensation of perilobular connective tissue, is covered on its inner surface by one layer, seldom more, of cuboid or cylindrical epithelium. In a few places epithelial covering may be missing. In the fibrovascular core there are

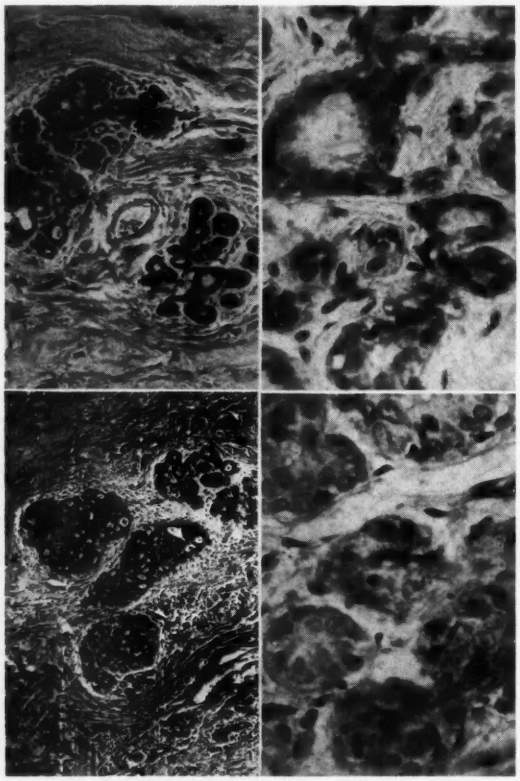

Figure 3.—*Upper left,* normal lobule (×130). *Upper right,* high power view of specimen at left (×430). *Lower left,* early lobular hyperplasia (×66). *Lower right,* high power view of specimen at left (×430).

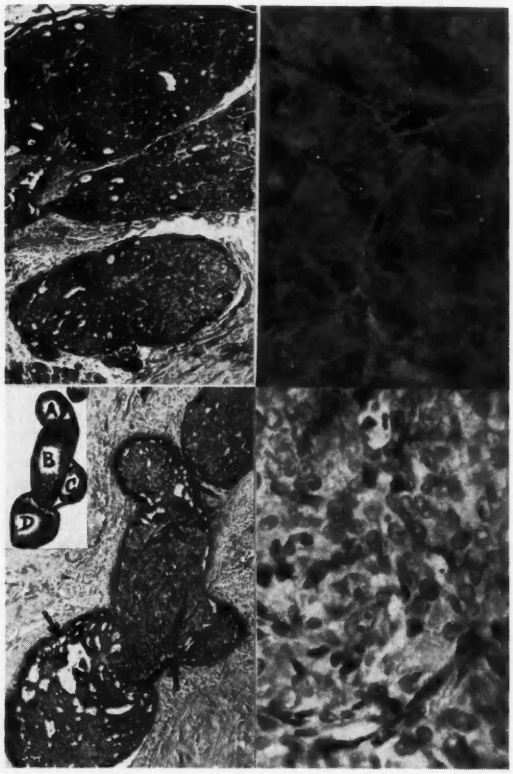

Figure 4.—*Upper left,* lobular hyperplasia. The lobule is cellular. Alveoli become compressed against each other. The perilobular connective tissue becomes more dense and sharply defined. Two hyperplastic lobules in the upper field are nearly fused together (×66). *Upper right,* high power view of specimen at left (×430). *Lower left,* hyperplastic changes have reached their maximum. Definition of the hyperplastic lobule is distinct. Alveoli join together in many places. Especially along the interlobular (perilobular) connective tissue several alveoli in a row coalesce (arrows). The main central hyperplastic mass is formed by fusion of four lobules, A, B, C, and D. Thus lobular hyperplasia with the subsequent changes described can come to be a duct papilloma of considerable extent (×35). *Lower right,* high power view of picture at left (×430).

often lacuna-like, dilated, blood-filled capillaries. One may see extravasation of blood cells and deposition of blood pigment in the stroma as well as stages of degeneration up to complete disintegration of the cells of both epithelium and stroma (Figures 2,*E*, and Figure 5, upper left and lower left and right).

Under high power magnification, although some areas have a cell structure resembling that in stage 3 or stage 4, there is less cell activity. The epithelial arrangement on the basement membrane has again become regular. Nuclei are less vesicular. The nucleoli and chromatin are still visible but less prominent than in stage 3 or stage 4 (Figure 5, upper right).

6. Regressive change is the main feature in this

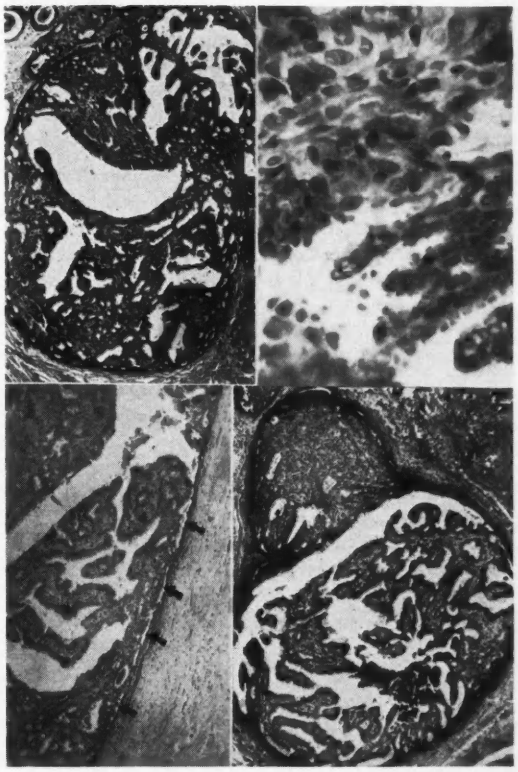

Figure 5.—*Upper left,* papilloma stage, shortly after maximal hyperplasia. The fibrous wall which surrounds the hyperplastic lobule is better defined than in the earlier stage. Several alveoli in a row under the perilobular connective tissue coalesce and facilitate separation of the lobular mass from the wall. Stages of regression up to complete disintegration of cells may be seen (especially in the upper right area of the field) (×60). *Upper right,* high power view of specimen at left (×430). *Lower left,* arrows point to early separation of the central mass from the wall (×100). *Lower right,* separation of the central mass from the wall has progressed so far as to form a considerable cystic cavity. Notice that the retracted central mass of the lobule duplicates the outline of the peripheral wall (×86).

stage. Various steps in the dissolution of the villous epithelial structure with its fibrovascular supporting framework are visible. The fibrovascular core is frequently congested with dilated blood vessels. The connective tissue of villi is sometimes hyalinized. The degeneration develops cystic cavities in which may be seen fragments of debris. The peripheral wall has become more dense (Figure 2,*F* and Figure 6, upper left).

Under high power magnification the cytoplasm of the surviving epithelium is homogeneous and the nuclei are solid, without recognizable detail of structure. In some areas cell boundaries are destroyed. Many cells have lost their nuclei (Figure 6, upper right).

7. Lastly the whole papillary structure has disintegrated, leaving only a few fragments in an otherwise empty cavity with a dense, avascular wall (Figure 2,*G* and Figure 6, lower left).

According to this view of the genesis of papilloma, it may be looked upon as a developmental stage on the way between lobule hyperplasia and final cyst formation. (This is, of course, only one of many possible ways in which cysts might be formed.)

A structure such as that in Figure 5, lower right, has usually been interpreted as showing either multiple points of origin of proliferative growth or multiple points at which a growing papilloma has united its epithelium with that of the duct or cyst wall. It is suggested that the exact opposite may be true—that connections between wall and central mass are only remains of alveolar epithelium and

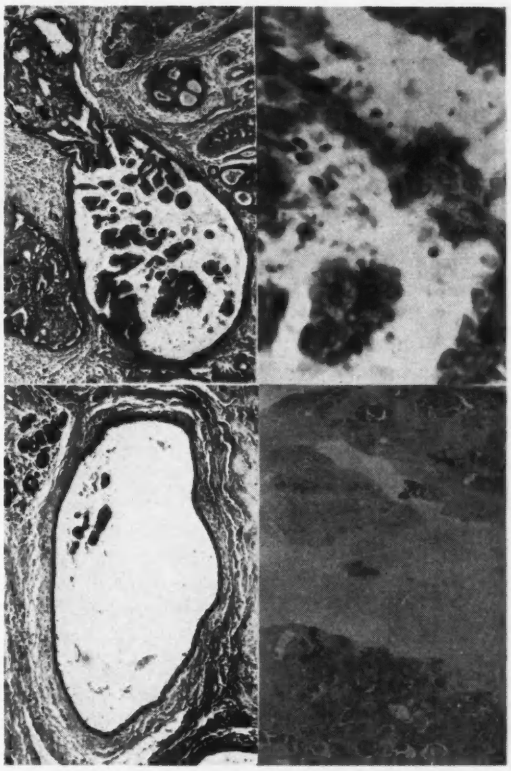

Figure 6.—*Upper left,* regressive change is the main feature. Various steps in the dissolution of the villous epithelial structure with its fibrovascular supporting framework are visible. Thus the degeneration develops a cavity of increasing size (×66). *Upper right,* high power view of specimen at left (×430). *Lower left,* the whole papillary structure has disintegrated and become detached, leaving a cystic cavity with a dense, avascular wall (×66). *Lower right,* the whole series of photomicrographs in Figures 3, 4, 5 and 6 are higher power views of various areas taken from the single slide shown here (×4).

connective tissue and may break and disappear as the mass of papilloma regresses. This is nothing else than the stage 5 described above.

With sufficient search, one may usually find under the microscope other developmental stages of so-called papilloma in the same breast. Figures 3 to 6 illustrate various stages, all of them included in the one slide shown in low power in Figure 6, lower right. The frequent multiple appearance of papilloma is therefore to be expected, for lobule hyperplasia embraces a wide area of breast; and therefore its product, duct papilloma, is naturally also multiple.

Not only may multiple separate and distinct papillomata be found, but what appears to be a continuous one may reach considerable size through coalescence of several neighboring lobules. The dark, irregularly shaped structure in Figure 4, lower left, developed from four hyperplastic lobules.

Since lobules may develop (and undergo hyperplasia) at any place between the external orifice of a milk duct and its terminal branches by new budding out from the duct, occasional development of papilloma in the nipple is readily explained.

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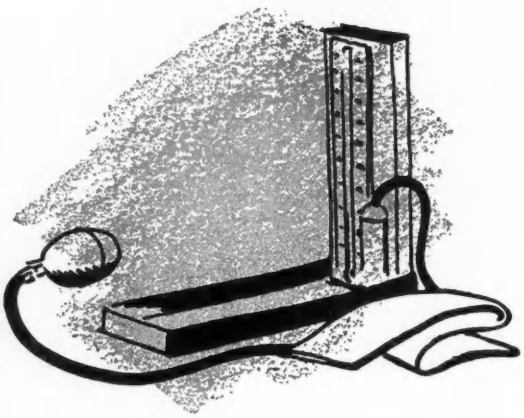

Human Tissue Preservation

Development of Regulations and Removal of Some Legal Barriers

W. MAX CHAPMAN, *M.D., M.P.H.*, Berkeley

• **Human tissue must be obtained promptly postmortem if it is to be successfully preserved.**

Legal assistance toward this goal has been established by the California Legislature.

To implement this legislation the State Board of Public Health has established regulations relating to human tissue preservation. These are the first such regulations in the nation.

Tissue preservation is not yet fully developed. Much research is in progress to overcome many problems.

The future may hold interesting developments. Present laws and regulations will implement them.

THE STATE BOARD of Public Health[6] at its April 1959 meeting established regulations relating to the preservation of human tissues, as required to implement the provisions of the California Health and Safety and Probate Codes. These are the first regulations in the nation dealing exclusively with human tissues.

Blood preservation, a related activity, has been performed under regulation for many years, but this activity falls within a different category.

The preserving and transplanting of human tissues is a comparatively new development. Much investigation is still in progress. Ultimately there may be a whole system of spare parts for ailing human beings.[7,9] Before this goal is reached, however, there are still some knotty problems to unravel. At present, materials consist mostly of non-viable homografts and plastic prostheses.[1,2,10,11]

Hopeful progress is being reported.[8,9,12] The future holds the realization of these exciting prospects. For present activity and in anticipation of this interesting future, California has formulated a constructive legal background.

The state legislature in 1957 removed some of the legal obstacles from the way of persons who desire to bequeath their bodies or portions of them for use in therapeutics or in research. Section 7115 was added to the Health and Safety Code, and Section 7100 was amended.[4] Section 20 of the Probate Code was also amended.[5]

These additions and amendments provide for the immediate fulfillment of instructions in a will by which a decedent has directed that the whole or any portion of his remains be given for therapeutic use, for research or for teaching purposes.

These statutes state that regardless of the validity of the will in other respects, or of the fact that it may not be offered for probate until a later date, the persons entitled to control the remains shall faithfully and immediately carry out the instructions of the decedent.[4,5]

Such provisions make possible the procurement of valuable structures within the critical few hours following death during which they may be successfully preserved.

For future success in human tissue transplantation, adequate supplies of such tissues must be available. Development in this field may parallel the now established function of blood transfusion. Not so long ago the transfer of blood from one person to another was an exciting and spectacular surgical achievement. The donors were looked upon as heroes. Today the giving of blood is looked upon as a routine responsibility.

For other tissue transplantation to keep pace with growing scientific knowledge and therapeutic need, tissue donations will have to become routine and commonplace, and legal barriers reduced to a minimum. The recent actions of the State Legislature and the State Board of Public Health have opened the way to achieve these goals.

Physicians in their relationships with the public and with their patients have a responsibility and an opportunity to promote the popularity of developing these storehouses of human spare parts.

In the process of formulating the regulations, assistance was sought from other agencies, including the Federal Government, which presumably had some experience in this field. It was disappointing to discover that the legal situation in tissue donation is chaotic. Therefore, it is a source of satisfaction to realize that California has taken the first positive action to establish an orderly legal basis for this service.

Other communities are also taking action to improve their situations in this regard. For example there is at present a committee in Washington, D. C., whose purpose is to assist Congress in passing a bill known as "The District of Columbia Tissue Bank Act."[16,17]

Submitted June 2, 1959.

In developing the California tissue preservation regulations, the first procedure was a tour of known tissue banks. The directors of these services almost without exception welcomed the idea of legal[15] backing for their work. They assisted actively in the formulation of the regulations.

Since blood banking is well established in California, and the regulations[3] under which it functions have served successfully, the first draft of tissue preservation regulations was patterned after the blood banks. Since both procedures are similar in scope, the established blood bank regulations should have served properly as a prototype. This was not the case, however. Tissue preservation is not yet ready for regulations as precise and detailed as those in blood banking.[15] So after further consultation with persons with experience in preserving human tissues, it was decided to reword the proposed regulations into a very generalized form. This met with difficulty from another source. Attorneys stated that such generalized language was entirely unsatisfactory from a legal point of view. It was stated by them that some sort of criterion for making determinations would have to be established. The regulations as they now stand represent a compromise between detail and generalization.

It is of special interest to note that no one person professed knowledge of all types of tissue preservation. Those who work with arteries disclaim knowledge of bones or eyes, those who work with bones say they have no knowledge of arteries or eyes.

For the most part, structures transplanted at present are not living tissues.[11] Bones, for example, act as biological splints over which the tissues of the recipient grow as over a scaffolding, eventually surrounding and ultimately replacing the transplant. Arteries are used in much the same way. In fact, dacron, orlon, and other synthetics seem to work just as well as human artery transplants, and therefore, in this field human material as prepared at present may not be entirely essential.[10]

Organs as such cannot be transplanted successfully at this time, except in special instances such as from one identical twin to the other. This is due to some undescribed marker on the cells of each individual which proclaims them as belonging to himself.[9] Transplants of living tissues from place to place in the same person are successful because they are recognized in their new surroundings as belonging.

It should be emphasized that research is busily in progress toward overcoming these barriers to transplantation of living tissues from one person to another. Ferrabee and Thomas[9] have stated: "In this exciting realm of spare parts we have two newly recognized basic biologic phenomena with which to help ourselves. It is the recognition of these phenomena that has infused new life into the ancient and wistful field of organ transplantation."

Recent success with living marrow transplants following radiation of the recipient illustrates these advances.[8,12] Work at the Naval Medical Center by Hyatt and his associates[13,14] with growth of human tissue in laboratory media further strengthens hope of an eventual living tissue transplantation program.

With these inspiring developments in progress and with an optimistic future ahead, it is believed that the California laws and regulations will remove legal obstacles and lubricate the administrative machinery for the bequesting of tissues by persons before they die, thus allowing opportunity to obtain them and to use them therapeutically and scientifically at the earliest possible moment. These regulations will also be an encouragement to new tissue preservation centers, both for therapeutic use and to advance the horizons of knowledge so that when greater use of human tissue is scientifically possible, the legal and administrative tools will be available with which to promote development in this exciting field.

The text of the regulations is appended.

2151 Berkeley Way, Berkeley 4.

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REGULATIONS RELATING TO HUMAN TISSUE PRESERVATION

(Title 17, California Administrative Code, Chapter 2, Subchapter 1, Group 7, Article 1, Sections 1200-1205, inclusive.)

Statutory Authority: California Health and Safety Code, Division 7, Part 1, Chapter 3, Sections 7100 and 7115; and Section 20 of the Probate Code.

Article I.

1200. DEFINITIONS. (a) As used in this Group, "person" includes teaching institution, university, college, legally licensed hospital, non-profit blood bank, artery bank, eye bank, or other therapeutic service operated by any agency approved by the State Director of Public Health.

(b) As used in this Group, "department" means State of California Department of Public Health.

1201. APPROVAL REQUIRED FOR TISSUE PRESERVATION. No person shall collect, process, store, or distribute human tissues obtained in accordance with Sections 7100 or 7115 of the Health and Safety Code, or Section 20 of the Probate Code, unless such person shall have received approval from the department.

1202. PROVISIONS FOR APPROVAL. (a) An application for approval shall be made to the department, which shall include the following items:

(1) Complete and detailed description of the methods, equipment, and technics used in relation to each tissue which is to be processed.

(2) The name and address of the person owning the place, establishment, or institution, in which the processing is to be carried on.

(3) The name and address of the director who shall be a duly licensed physician and surgeon in the State of California.

(4) Kinds of tissues to be processed.

(5) Such additional information as the department may require in order to determine compliance with these regulations.

(b) The operation of the tissue bank shall be under the direct supervision of a physician and surgeon duly licensed in this state.

(c) The person shall be prepared to begin operations at the time application for approval is submitted.

(d) Application will be approved only when establishment and the methods used are such that the tissues processed will not be contaminated, dangerous, or harmful.

(1) Representative samples shall be provided for the department of each lot of tissues, if requested by the department, for the purpose of checking sterility, quality, or other factor.

(2) Any duly authorized representative of the department shall have free access to the establishment and the records thereof at all reasonable hours for the purpose of ascertaining compliance with these regulations.

(e) Approval may be granted only for the processing of tissues for which there is scientific evidence of therapeutic value and for which methods of preservation have been developed.

(f) Renewal of Approval. (1) The department shall issue renewal notices annually prior to the end of each calendar year.

(2) Each person on applying for renewal shall review his activities in the field for the preceding year if requested to do so by the department.

(g) There is no fee required in connection with this approval, or with renewal of approval.

1203. EXEMPTIONS FROM APPROVAL. This Group does not apply to autogenous tissue grafting, or to homografts where tissues are obtained from living donors, or to other biologic products as defined in Section 1601 of the Health and Safety Code.

1204. RECORDS. (a) The director or supervisor of approved tissue processing programs shall keep records of all tissues processed.

(b) Records may be designated by number (instead of by name of donor) to conform with individual specimens or lots of tissue.

(c) Records shall contain the following data:

(1) Name and address of institution from which material was obtained, also name of physician responsible for procurement.

(2) Date and hour of death of donor.

(3) Cause of death, and age of donor, and when available, pathologic results including autopsy report.

(4) Date and hour of obtaining tissue. If more than 4 hours postmortem, state whether refrigeration was used and, if so, give length of time and temperature.

(5) Date and method of processing tissue, if applicable.

(6) Date final storage begins.

(7) Date and place of use.

(8) Results of tests for contamination and other examinations.

(9) Pertinent laboratory data, such as serologic tests for syphilis, from donor. Prospective donors with histories of hepatitis shall not be accepted.

(10) Information relating to consent or authorization.

(d) Unless otherwise required by other provisions of law, all records and information shall be retained for not less than two (2) years.

1205. LABELS. (a) A method which will positively identify each specimen during the period from procurement to the beginning of final storage shall be placed in effect by each person.

(b) The final label shall show:

(1) The name of the product, and method used in processing.

(2) A number which will identify the processing information related to the specimen.

(3) A date prior to which use must be made of the product, or prior to which use of the product is recommended, whichever is applicable.

(4) Name and address of the processor.

(5) If temperature is a factor in preservation, the temperature range within which deterioration is avoided shall be specified.

(6) Other data descriptive of the product may also be included in the label.

(7) Directions for reconstitution of the product, and preparation for its use may be included in the label or in an accompanying circular.

(8) Altered or supplementary labels shall not be used.

CASE REPORTS

Mesenteric Duodenal Ileus

WARNER M. SOELLING, M.D., Modesto

INTESTINAL OBSTRUCTION due to compression of the horizontal duodenum by the superior mesenteric artery is a well established, but little known, entity. First described in 1861,[5] the condition has been infrequently diagnosed and has come to be regarded as rare. It is briefly mentioned in most textbooks of medicine under the terms *arteriomesenteric ileus, mesenteric artery syndrome, mesenteric root syndrome* and *mesenteric duodenal ileus*. During the past decade there has been a renewal of interest in the syndrome with the publication of a number of case reports, and it has been suggested that the condition may be more common than has been assumed.

The following case is presented to illustrate the mild and chronic form in which mesenteric duodenal ileus may manifest, and the association of weight changes with the development of the syndrome and its remission.

REPORT OF A CASE

A 13-year-old girl was seen in the office because of pain in the right epigastrium of a month's duration. The pain was described as varying between a feeling of fullness and moderate discomfort. It did not radiate and was unrelated to meals, to exercise or to changes in position. There was no nausea or vomiting, and no abnormality of bowel habits. The family reported that the patient had become noticeably plump during the preceding months. They did not know the exact weight gain.

The patient had been troubled by similar symptoms since age 4. Her parents recalled her becoming easily fatigued and being unable to keep up with her playmates and had attributed her pains to this excessive fatigue. They had never noted any constipation or any association of the discomfort with meals. At ages 5 and 7 the pains became sufficiently aggravated to cause admittance of the patient to a hospital. During the first hospital stay tonsillectomy was done in the expectation that it might provide a solution. The second admittance to hospital was urged by the family physician, who suspected appendicitis. The consulting surgeon[6] found some spasm of the rectus muscle, more prominent on the right, and mild tenderness upon palpation. His impressions were possible appendiceal irritation and left bronchopneumonia, and he decided against surgical intervention. The patient improved with bedrest and was discharged after three weeks of observation.

Upon physical examination the patient was observed to be well developed, somewhat obese, and apparently in excellent health. The abdomen was soft and non-tender, and no organs or masses could be palpated. The vital signs and other physical findings were within normal limits, as were the results of routine urine and blood examinations. The impression was that the patient had functional intestinal spasm, and Thorazine Spansules® (chlorpromazine), 75 mg., to be taken on arising and in the early afternoon, were prescribed.

When seen two weeks later, the patient said that she felt worse and her description of the discomfort was unvaried. A mass palpated in the right epigastrium was thought to be a distended intestinal loop. The patient was put in hospital, where she was given a liquid diet and was kept at bedrest. There was prompt subjective improvement and three days later the abdominal mass could no longer be felt. A plain x-ray film of the abdomen at this time showed no distention. Studies of the upper gastrointestinal tract showed a decided delay in the passage of barium in the midline, where the superior mesenteric artery crosses the duodenum; this was totally relieved when the patient was placed in the prone position. It was concluded that the patient's symptoms were referable to a mesenteric duodenal ileus. She was discharged with instructions to resume normal activities, but to eat smaller meals and to assume the knee chest position if the discomfort should return.

There was no recurrence of symptoms in the ensuing 12 months of observation. The parents reported that immediately following the period in the hospital the patient's weight decreased 10 pounds and that she appeared slimmer. In x-ray studies carried out six months later no abnormality of the upper gastrointestinal tract was observed.

DISCUSSION

The symptoms commonly associated with mesenteric duodenal ileus are those of high intestinal obstruction with continued upper abdominal distress, nausea and vomiting and loss of weight[3];

Submitted September 25, 1959.

Cunha and Day[2] said vomiting was present in every case. That the condition can occur in milder form, manifesting in nothing other than epigastric discomfort, is evidenced by the present case.

In contradistinction to the short history in most of the reported cases, the symptoms in the case here reported recurred over a period of ten years; on three widely separated occasions, at ages 5, 7 and 13, they became sufficiently aggravated to require hospitalization. Christian[1] suggested the chronic remittent nature of this condition when he described attacks in childhood with freedom from the age of 12 and 15 years and recurrence in adult life.

A striking correlation between weight changes and alternation of symptoms was manifest in this patient. The exacerbation of complaints was preceded by a pronounced gain in weight, and complete remission followed weight reduction; the existence of the duodenal obstruction and its subsequent disappearance were objectively established by x-ray studies. Cunha and Day[2] described weight changes as common to all patients with the syndrome. They attributed the impingement of the artery upon the duodenum to changes in structural relationships attendant upon alterations in fat deposits in the tissues of the duodenum, mesenteries and retroperitoneal spaces. In the absence of other measures, the improvement in this patient appears to have come about through a reversal of the weight gain which preceded the exacerbation of symptoms.

It would appear that noting a change in body weight in association with this syndrome would be of clinical value. A history of weight gain or loss preceding the onset of symptoms can alert the clinician to the possible presence of this condition. Such a history may further serve to indicate the direction of medical measures for the purpose of reestablishing the patient's weight at the level obtaining before symptoms occurred. The improvement in the patient in the present case suggests the possible effectiveness of this approach. Conceivably, such management may reduce the number of patients requiring surgical intervention.

With regard to the incidence of mesenteric duodenal ileus, the report of Keegan and Tyson[4] of four cases having been diagnosed at one air force hospital within a year's time suggests that the syndrome may not be as rare as has been assumed. It is to be wondered whether less severe forms of this condition might not be the cause of abdominal discomfort in an appreciable number of patients with mild remittent complaints which are never satisfactorily explained. The tendency of the condition to manifest in mild and chronic form, as illustrated in this case, renders recognition problematic since the x-ray studies necessary to the diagnosis are less likely to be done when symptoms are minimal. If clinicians remain aware of the syndrome and consider it in the differential diagnosis of patients with abdominal complaints, it is conceivable that this condition will be diagnosed with greater frequency and become recognized as a more important cause of abdominal discomfort.

SUMMARY

A case of mesenteric duodenal ileus was established by x-ray studies in a 13-year-old girl with a ten-year history of remittent abdominal discomfort. Exacerbation of complaints was preceded by a gain in body weight and remission followed a loss in weight.

1112 Ulrich Ave., Modesto.

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Congenital Esophageal Stenosis

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THE CONGENITAL tracheoesophageal fistula complex is an unusual anomaly of newborn infants. Esophageal stenosis without fistula is quite rare; very few reports of it appear in the literature. Humphreys and co-workers[3] reviewing 136 cases of esophageal anomalies, noted only one case of esophageal stenosis without fistula. Without fistula, stenosis generally does not require emergency therapy, for unless there is esophageal communication with the tracheobronchial tree, aspiration pneumonia is unlikely. When the obstruction is incomplete and liquids can pass, frequently the first manifestation occurs when solid foods are added to the diet.

Gross[1] reviewed 38 cases of congenital esophageal stenosis from the records of the Boston Children's Hospital. In half the cases the stricture was in the middle third of the esophagus, in a fourth of cases it was in the upper third and in a fourth in the lower third. Gross indicated that repeated dilatation gave complete relief in most cases and stated that one child had 91 dilatations over a 14-year period. However, in recent years he has treated five patients (aged three months, ten months, sixteen months, ten years and eleven years) by resection and end-to-end anastomosis. His present plan of therapy for these patients would seem to be summarized by his statement "the results [of resection] have been so gratifying that we believe that any congenital esophageal stenosis which does not seem to be yielding after a

Submitted October 16, 1959.

Figure 1.—Preoperative film August 6, 1958 showing segment of esophagus still stenotic despite bouginage which had been carried out 12 times.

half dozen attempts at dilatation should be strongly considered for surgical resection or revision of the strictured area."

Hollinger and co-workers[2] indicated that in most cases bouginage was helpful but stated that surgical correction was necessary in some cases. One of the patients included in their report, who was treated by a procedure of the Ramstedt type, subsequently required occasional endoscopic dilatation. Vargas and co-workers[5] reported the use of myotomy in the case of a seven-weeks-old girl with a stenotic area at the cardioesophageal junction. Postoperatively a barium swallow showed continued narrowing with partial delay in passage of the ingested material. Dilatation every week for eight weeks then was carried out, with gradual increase in the size of the bougie up to a No. 28 (French). An esophagram eight months postoperatively showed no obstruction and clinically the child was asymptomatic.

Sweet and Terracol[4] stated that congenital esophageal stenosis without fistula is due either to a mucosal membrane or web, or to narrowing of the lumen in a portion of the esophagus caused by a thickening of the muscular wall. They said that bouginage is usually effective in cases of obstruction by mucosal membrane, although occasionally more definitive operation is required—either excision of the membranous diaphragm or cruciate incisions of the membrane. Surgical excision of a non-membranous obstruction may require the sacrifice of a segment of esophagus measuring up to 2 cm. in length. Humphreys and co-workers[3] stated that a defect 2 to 3 cm. in length may be gapped successfully and an end-to-end esophageal anastomosis performed.

The following case report indicates our method of management of esophageal stenosis without fistula.

REPORT OF A CASE

The patient was a 12-months-old girl, the product of a normal pregnancy and delivery. When she was first given solid food at one month of age, difficulty in swallowing was noted. Solid feedings were regurgitated and only liquids could be retained. At that time x-ray studies showed a stenosis at the junction of the middle and upper thirds of the esophagus. Gastrostomy was done to facilitate feeding and to permit retrograde dilatation with a Tucker bougie.

After two months of this treatment the gastrostomy was closed and peroral esophagoscopy with bouginage of the stricture was carried out for eight months at intervals of one to three weeks. For varying periods after bouginage the child could swallow pureed foods; and each time she began again to regurgitate feedings, bouginage was repeated.

The infant was referred to us for care when she reached the age of 12 months. Esophagoscopy and dilatation was carried out four times at approximately two-week intervals. X-ray studies (Figure 1) were done immediately following bouginage with instruments up to a size 20 (French). By filling the esophagus above and below the stenotic area with barium, the length of the stricture was delineated. Pressure over the filled stomach caused reflux of barium from the stomach into the lower esophagus distal to the stricture. The stenotic segment of esophagus as seen in the x-ray films was about 1.8 cm. long.

On esophagoscopic examination the lumen was observed to be narrowed to about 1 mm. in diameter at the proximal end of the strictured area. The mucosa appeared normal. Bougies of size 12 to 20 (French) were passed consecutively through the stenotic segment with moderate resistance.

Since esophagoscopy and dilatation had been performed every one to three weeks for approximately twelve months without adequate improvement, we felt that more definitive surgical therapy should be carried out to avoid the hazards of repeated anesthesia and bouginage and to provide a more satisfactory means of feeding.

At operation—a preliminary cannulation of the inferior vena cava through the long saphenous vein at the femoral junction was carried out. A transpleural approach through the right fourth intercostal space was used. The esophagus was delineated and although the external configuration was normal throughout, a segment 1.5 to 2 cm. long in which the wall was decidedly thickened was felt. This area was somewhat more adherent to the surrounding tissues but no evidence of a tract or band to the tracheobronchial tree was present. The involved segment of the esophagus was just cephalad to the tracheal carina and corresponded to the strictured segment demonstrated by the barium swallows.

The esophagus was mobilized from the thoracic inlet to about 1.5 cm. proximal to the esophageal

hiatus. No vascular insufficiency was manifest by change of color of the esophagus.

As a preliminary to excision of the segment of thickened and stenotic esophagus, a vertical incision was made through the muscularis and an attempt was made to separate the muscle bundles in a manner similar to that followed in a Ramstedt procedure. This could not be done satisfactorily. The normal esophagus above and below the area of stricture was grasped with Potts ductus clamps and the strictured area was then excised.

An end-to-end anastomosis was carried out with two layers of interrupted 5-0 atraumatic silk sutures used to secure the union. No tension was present on the suture line after the anastomosis had been made. The Potts ductus clamps greatly facilitated the handling of the esophageal ends during the anastomosis and caused no injury. Before the anastomotic line was closed anteriorly, a No. 8 polythene tube was threaded up to the retropharynx and down to the stomach. The cephalad end was brought out through the right nostril.

After completion of the operation, nasogastric suction was maintained continuously for 72 hours. The intercostal catheter that had been inserted before the chest was closed was attached to underwater drainage bottles. The tube was removed the day after operation. During the period of nasogastric suction, hydration was maintained by routine intravenous feedings. On the second postoperative day the patient passed flatus and stools. On the following day sugared water was given in 1 to 2 ounce feedings every hour through the polythene nasogastric tube. When this regimen was seen to be well tolerated by the gastrointestinal tract, skimmed milk was substituted for the sugared water. On the fourth postoperative day the nasogastric tube was removed and feedings by mouth were started.

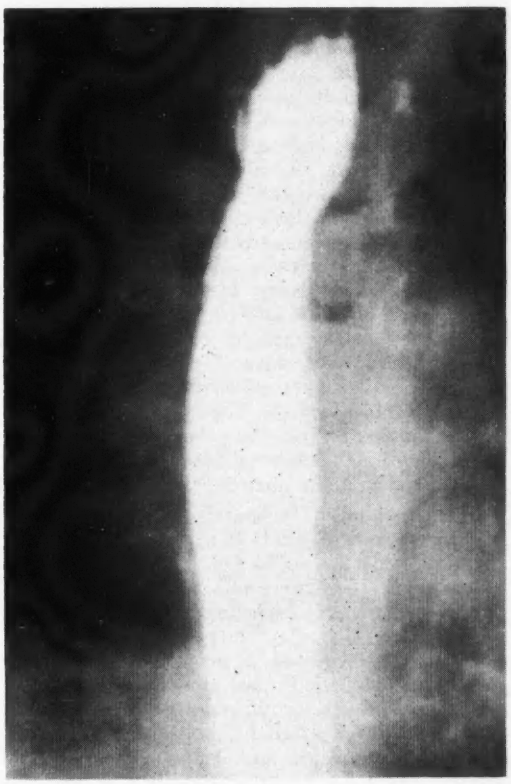

Figure 2.—The esophageal diameter on August 24, 1959 is shown to be excellent one year following operation, and ten months since the last esophagoscopy and dilation.

Figure 3.—This low magnification photograph demonstrates the cross-section of the excised stenotic segment of esophagus. Note the narrowed lumen and decided thinning of submucosal fibrotic layer.

X-ray examination with barium swallow on the ninth postoperative day showed an excellent lumen the length of the esophagus. The infant was discharged on the eleventh postoperative day.

The specimen was a mucosal lined narrow tube-like structure 1.5 cm. long and 1.2 cm. in diameter.

Microscopically (Figure 2) the submucosa and muscularis were observed to be decidedly thickened. Scar tissue partially supplanted the submucosa and extended into the muscularis. There was an elongated narrow ulcer of the mucosa extending to the muscularis externa, and it was surrounded by a heavy infiltrate of mononuclear cells and polymorphonuclear neutrophils and eosinophils.

Following discharge from the hospital the infant

was given a soft diet including pureed foods. When there seemed to be some difficulty in swallowing that developed shortly after "junior" chopped foods were introduced to the diet about two months after the patient returned home, esophagoscopy was carried out again. The lumen of the esophagus at the anastomotic line was 4 to 5 mm. in diameter when first visualized. The esophagus was dilated with no difficulty from a size 20 (French) through size 32 bougie. After that, a 40x7 mm. Jackson bronchoscope was readily passed through the anastomotic line.

At the time of latest observation, a year after operation, the child's nutritional status was excellent and she weighed 25 pounds. She was able to swallow foods of a size normal for her age. X-ray examination with a barium swallow (Figure 3) showed an almost completely normal lumen at the site of anastomosis.

SUMMARY

In treating a patient who had congenital esophageal stenosis without fistula, esophagoscopy and dilatation were carried out 15 times at one-week to three-week intervals during the first 13 months of life. Owing to recurrent difficulty with solid foods, esophageal resection with end-to-end anastomosis was then carried out.

Esophagoscopy was performed once again two months postoperatively. The patient was clinically well thereafter and the esophageal lumen was radiographically normal.

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Pulseless Disease (Takayashu's Syndrome)

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"PULSELESS DISEASE" was first described in 1908 by the Japanese ophthalmologist, Takayashu.[10] He noted, in young Japanese women, retinal vessel changes and cataract formation associated with decreased or absent pulses in the branches of the aortic arch. Between 1908 and 1952, a total of 58 cases were described by Japanese authors. From 1952 to 1956, a total of 49 cases in the Occident (46 in females and three in males) were reported.[2,3,4,6,9,11]

Synonyms include *aortic arch syndrome, young female arteritis, obliterative brachiocephalic arteritis, chronic subclavian-carotid obstruction syndrome*[5] and *hypersensitivity arteritis*.[7] The disease is now thought to be caused by a hypersensitivity reaction and has been placed in the visceral angiitis group which includes the collagen vascular diseases.

The clinical manifestations of pulseless disease are those of arterial deficiency in the upper half of the body with involvement of the branches of the aortic arch and reduced or absent pulses in the brachiocephalic arteries and their divisions. The disease is noted most frequently in women 15 to 45 years of age. Often there is a past history suggestive of rheumatic fever, rheumatoid arthritis or lupus erythematosis. Carotid sinus syncope, perforation of the nasal septum and cerebral atrophy with epileptiform crises have been described; also visual disorders with retinal vessel changes, iris atrophy, cataract formation and corneal opacities. Facial and arm muscle atrophy may occur, as well as intermittent claudication of the masticatory and arm muscles. Hypertension of arteries in the legs is frequently present. Extension of the pathologic process beyond the aortic arch has been demonstrated in the intercostal arteries, in the visceral arteries and in the lower extremities. Tachycardia, cardiac hypertrophy and dilatation complete the clinical picture.

REPORT OF A CASE

A moderately obese, 25-year-old Mexican housewife was examined June 10, 1957, on complaint of increasing fatigue over a period of three months, headaches, dizziness, exertional shortness of breath and pronounced weakness and numbness of the entire left arm. She had had no difficulty with three pregnancies seven, five, and two years previously. From childhood until age 17, she was a circus trapeze performer in Mexico. From her recitation of her diet at that time of extreme physical activity it was calculated that she consumed at least 9,000 calories daily, consisting of 50 per cent fat, 40 per cent carbohydrate and 10 per cent protein. She had between-meal snacks of chocolate and candy bars with nuts, ice cream, soft drinks, potato chips, peanuts, enchiladas, tacos, tortillas and coffee with cream. Eighteen months before the onset of the present illness, the patient reduced her total daily caloric intake to 4,000, the proportions of fat, carbohydrate and protein remaining the same.

The patient was 62 inches tall and the body weight was 156 pounds. A grade II hypertensive retinopathic state was noted in the right eye; the left fundus was normal. There were no characteristic arteriovenous aneurysms in the retinal vessels as originally described by Takayashu. The pulse rate was 90. The blood pressure was 180/70 mm. of mercury in the right arm, 104/84 in the left arm and 112/88 in the right leg. The left carotid pulse was decidedly diminished and the left radial pulse barely palpable. The right carotid and radial pulses were full and strong. The femoral, dorsalis pedis and posterior tibial pulses were reduced. While the neck was being gently palpated, the carotid sinus was apparently

Presented at the Southern California Regional Meeting of the American College of Physicians, Riverside, California, February 22, 1958.
Submitted July 28, 1959.

stimulated, causing the patient to collapse momentarily. A vigorous thrust of the aortic arch accompanied by a systolic thrill was easily felt in the retromanubrial notch. A high-pitched, grade II systolic murmur was heard over the entire precordium and was transmitted up into the neck, posteriorly along the spinal column and down the abdominal aorta.

Results of blood serology (VDRL) were negative. No abnormalities were noted on routine urinalysis, in results of blood cell counts, in hematocrit determinations, in contents of cholesterol, non-protein nitrogen and protein-bound iodine, of the blood or in urinary 17-ketosteroids and 17-OH-corticosteroids (11-oxysteroids). There was a decided elevation in the serum lipoproteins; the standard Sf* 0-12 was 643 mg. per 100 cc. (normal 283 mg.) and Std. Sf 12-400 was 200 mg. per 100 cc. (normal 107 mg.). The serum albumin, as determined by paper electrophoresis was 3.3 gm. per 100 cc. The beta component was just above the normal, being 1.2 gm., and the gamma globulin was elevated to 2.2 gm. per 100 cc. No abnormality was observed in an x-ray film of the chest or in fluoroscopic examination of the heart. An electrocardiogram was within normal limits.

Angiocardiography was carried out and all films in the series showed an abrupt ending of dye distribution at the level of 6th thoracic vertebra, which approximated the lower limits of visible calcification in the wall of the aorta. One interspace above this, there was a segment of decreased dye density. The exact site of stenosis or coarctation could not be identified.

A month later, retrograde aortography was undertaken but visualization of the thoracic aorta after dye injection was unsatisfactory. Exploratory thoracotomy then was carried out. The thoracic aorta from the level of the innominate takeoff to below the diaphragm (as far as could be felt) was decidedly narrowed, thickened, non-pulsatile and sclerotic, with large stony-hard plaques making it completely inadequate for either replacement or by-pass surgical repair. There was involvement and narrowing of the left common carotid and left subclavian arteries. The inflammatory reaction extended into the paravascular tissues, making dissection extremely difficult. The intercostal vessels were so nearly obliterated as to be hardly identifiable. At no point was there definite coarctation of the aorta. There was some pulsation of the aorta in the ascending portion and at the area of the innominate takeoff. All pusations of the aorta disappeared beyond this point. Attempt at an aortogram on the table was unsuccessful. Puncturing the aorta proved it to be a rigid tube in no way resembling a normal elastic vessel. Biopsy was not obtained. No satisfactory correction of the vascular disease could be carried out. The patient was returned to the ward in good condition.

Postoperatively, the patient's treatment consisted solely of a low-fat, 1,200-calorie diet with multivitamin supplement and sitosterol. Physical findings remained unchanged during the subsequent months except for loss of 20 pounds in body weight. Dizziness, headache, weakness of the left arm and undue fatigue abated. The patient did all her housework and frequenty walked to town, a round-trip distance of two miles. Serum lipoprotein studies showed standard Sf 0-12 of 325 mg. per 100 cc. (slightly elevated) and the standard Sf 12-400 of 104 mg. per 100 cc. (normal).

*Sf = Svedberg flotation units—a designation of density of lipoproteins.

DISCUSSION

The apparent success of treatment along antiatherogenic lines plus the history of huge consumption of fat raises some question as to the origin of arterial disease in this case. I suspect that the patient has atherosclerosis of the aorta superimposed upon hypersensitivity arteritis. The extension of the inflammatory reaction beyond the large arteries into the paravascular tissues is characteristic of a hypersensitivity reaction. The hyperglobulinemia is further evidence of a possible relationship between "pulseless disease" and disorders of the visceral angiitis group.

The differential considerations in diagnosis of "pulseless disease" include syphilitic and non-syphilitic aortitis, congenital anomalies such as coarctation of the aorta and aortic arch disease due to chronic dissection, trauma or atherosclerosis.[1,8] Clinically it is difficut, if not impossible, to differentiate aortic arch disease caused by atherosclerosis from that caused by hypersensitivity arteritis except for the age and sex of the patient. Atherosclerosis appears in the older age group of both sexes, whereas "pulseless disease" occurs predominately in young women. Biopsy specimens in "pulseless disease" characteristically show extensive luminal narrowing with medial and periadventitial fibrosis resembling the findings in the temporal arteritis of Horton.

Treatment is primarily conservative. Usually thromboendarterectomy or arterial grafting is technically impossible. On theoretical grounds, it is doubtful that surgical treatment would offer lasting relief, because of the allergic nature of the disease. Adequate rest, proper diet and administration of multivitamins, antihypersensitivity substances and anticoagulants constitute the mainstays of therapy. Aspirin is given in a dosage of .06 gm. per pound of body weight per day, ascorbic acid one to two grams per day, and prednisone (or a similar corticoid) 2.5 to 5 mg. three times daily. Corticoids are especially indicated if the eosinophil content of the circulating blood is high. If helpful, they should be continued indefinitely, since discontinuance may cause exaggerated tissue reactions of the Arthus and Sanarelli-Schwartzman type often seen in other forms of angiitis. These reactions are suppressed by corticotropin (ACTH), cortisone and the previous injection of nitrogen mustard. Heparin or dicoumarin also prevent the Schwartzman reaction and have been used in the treatment of this disease. Potassium in large amounts has been suggested.

SUMMARY

A case of "pulseless disease" in a 25-year-old Mexican woman is presented. Her diet was unusually high in calories and fat. Treatment was mainly supportive with strict attention to a weight-reduction and low-fat diet. Clinical features of pulseless disease and methods of treatment are discussed.

239 South Eighth Street, El Centro (Zavala).

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Trismus Due to Perphenazine (Trilafon®) And Proclorperazine (Compazine®)

STANLEY MARCUS, M.D., DAVID H. FELDMAN, M.D., and HARRY H. SPERLING, M.D., Sherman Oaks

TRISMUS is a dramatic occurrence which hitherto immediately raised the fear of tetanus as the most likely cause, assuming local abnormalities could be excluded. The introduction and widespread use of phenothiazines has added another possible cause that must be considered whenever trismus is encountered. While it has been described,[4,7,9] trismus has not been stressed as a "side effect" of the phenothiazines. The obvious importance of differentiating trismus medicamentosa from trismus due to tetanus prompted this report of three cases of the former.

REPORTS OF CASES

CASE 1. A 60-year-old white woman was first seen in her home at about 8 p.m. on December 11, 1958, because of "jaw spasm" of about ten hours' duration. She had first noted difficulty in enunciation at about 10 a.m. that day. Soon thereafter, and intermittently throughout the day, she had had episodes of spasm of her jaw muscles with biting of her tongue. At such times her tongue would protrude from her mouth and she had the feeling she was unable to bring it back into her mouth. Associated with the episodes of "jaw spasm" she had a feeling of "numbness" deep inside her face bilaterally, "but I do not mean the skin by this description." Subsequently it was determined that the patient had been given chloral hydrate and perphenazine (Trilafon®) by another physician in treatment for alcohol withdrawal symptoms. She had taken 16 4.0 mg. tablets of Trilafon® (perphenazine) beginning December 9. The instructions on the bottle were for two tablets every four to six hours. The patient said she believed she took eight on December 9, six on December 10 and only two early on the date of the onset of the trismus. She had been seen earlier that evening by the physician who had prescribed the drug, and he had administered calcium intravenously for the trismus, without effect. There was no history or evidence of a recent puncture wound.

Four days previously the patient had ended a one-month-long drinking spree. She had over-indulged to some extent in alcohol periodically for years. Some elements of the hyperventilation syndrome were present by history, particularly excessive sighing, globus hystericus and tachypnea.

The patient had never had tetanus prophylaxis.

The blood pressure was 150/80 mm. of mercury, the temperature 100.0°F. rectally, and the pulse rate 90. The pulse was regular. Respirations were slightly increased. The patient spoke with a slightly nasal tone and her speech was slurred. She was alert and oriented in all spheres. At one time she had a flapping-like tremor of both upper extremities, not of a convulsive nature. Only a few lower central teeth were present, and the tongue, which was cyanotic was swollen and lacerated on the right side. Several ecchymotic areas were present on both sides of the mouth, apparently the result of pressure by the upper and lower gums. There were no oral masses and no evidence of infection. Neither tenderness over the maxillary sinus areas nor postnasal drip was observed. The neck was supple. Plantar reflexes were downward and the ankle jerks, knee jerks, biceps and triceps were all normally active and equal throughout when tested between seizures No abnormalities of sensation in the hands and feet or of motor strength in the extremities were noted in a brief examination. Abdominal palpation elicted no abnormality. In particular there was no abdominal muscle spasm.

An attack of trismus occurred when the patient was first seen, but it rapidly disappeared spontaneously. Soon thereafter the patient had a severe episode of bilateral masseter muscle spasm. During this episode her tongue protruded and while biting down fiercely on it, she moaned with pain. Two to three minutes of efforts to pry her jaws apart were unavailing and she was then given sodium amytal intravenously. After the administration of approximately 0.2 gm. the muscular spasm disappeared and the patient was able to retract her tongue. There were no further attacks of trismus.

Submitted August 14, 1959.

The patient was put in hospital that night. An otolaryngologist who examined her could find no local cause of trismus.

Hemoglobin content and packed cell volume of the blood were within normal limits. Leukocytes numbered 15,100 per cu. mm.—75 per cent segmented, 22 per cent lymphocytes, 1 per cent monocytes and 2 per cent eosinophils. The serum calcium was 11.5 mg. per 100 cc. and the serum phosphorus was 2.9 mg. per 100 cc. Blood urea nitrogen content and results of liver function test and spinal fluid test were all within normal limits. Serum magnesium content was 1.84 mg. per 100 cc. The urine showed a very slight trace of albumin and it contained 20 to 30 pus cells per high power field.

On December 16 the patient spontaneously hyperventilated with respirations at the rate of one a second for approximately 70 seconds. At this point she was dizzy, tired and unable to continue, but there was no evidence of tongue protrusion or trismus.

CASE 2. The patient, a 37-year-old white woman had onset of abdominal cramps, diarrhea and nausea without vomiting on Friday, January 30, 1959. These symptoms persisted and Combid® was prescribed the next day. Each Combid® spansule contains 5.0 mg. of isopropamide (Darbid®) and 10.0 mg. of proclorperazine (Compazine®). The patient had only one Combid® capsule on Saturday and one Combid® capsule in the morning and one in the evening of Sunday, February 1. She was comfortable on awakening the next day, but at 10 a.m. she noted the onset of spasm of her jaws with facial muscle spasm, continual yawning without control, and "slurring of speech"—a thick-tongued speech which caused listeners to snicker. There was also a "pulling of the tongue back into the throat." The patient cried frequently for two hours, after which spontaneously symptoms ceased for approximately three hours.

At 3:30 p.m. symptoms resumed with "tongue swallowing," dryness of the mouth and spasm of the jaw with "dislocation to the left side." Again these subsided after an hour, then recurred at 5:30 p.m. When the patient was observed at 5:45 p.m. spasm of the masseters, facial muscles and periorbital regions was noted. She was in a state of great anxiety and was holding her tongue with her fingers to "keep it from being pulled back and choking me."

One hour after treatment with phenobarbital by mouth and Benadryl® (dephenhydramine hydrochloride), the symptoms permanently abated.

The patient had had Compazine® (proclorperazine) prescribed in July, 1957, without adverse effect at that time.

CASE 3. A 39-year-old well developed, well nourished white man was admitted to hospital April 28, 1958, with a depressed fracture of the nose caused when a wrench had fallen on him. Under local anesthesia the fracture was reduced. Postoperatively, the patient complained of severe headache, nausea and vomiting. On April 29 Compazine® spansules, 15 mg. three times a day were ordered. The nurse mistakenly wrote down 50 mg. spansules three times a day, and 45 mg. was given three times on April 29 and three times on April 30. The total amount of Compazine® administered in this 48 hour period was 270 mg. It was then discontinued.

At 10 a.m. on May 1, 30 hours after the Compazine® was discontinued, the patient became very restless, perspired profusely and thrashed about wildly in bed. He complained of difficulty in breathing, of being unable to open his mouth, and of pain down his right shoulder and arm and the right side of his face. At 11 a.m. the patient began having twitchings of his face and of the rest of his body. Both sides of his face were now painful and muscular twitching of face, tongue and body was noted. His tongue protruded and he said he had a feeling he was unable to retract it into his mouth. A neurosurgical consultation was obtained and an electroencephalograph was ordered. The only abnormalities noted were pronounced muscle contractions throughout the body. The patient was by then unable to open his mouth, and opisthotonos was present, with the head held dorsiflexed and to the left. He was sweating profusely. Sodium amytal 0.25 gm. was given intravenously and did not seem to improve the patient's condition. He was incoherent and uncooperative.

Upon consultation a diagnosis of "possible tetanus" was made and the patient was transferred to the contagious disease ward of the Los Angeles County General Hospital. There also a diagnosis of possible tetanus was made and a total of 150,000 units of tetanus antitoxin was given, 75,000 units intravenously and 75,000 units intramuscularly. Twelve hours later the symptoms diminished and in 24 hours entirely disappeared.

As a result of the tetanus antitoxin the patient later had an extremely severe serum sickness reaction, which incapacitated him for some time.

DISCUSSION

The foregoing case reports are submitted to emphasize the occurrence of trismus due to phenothiazine derivatives. Other reports have been made of protrusion of the tongue and inability to retract it in connection with use of these drugs.[4,9,12] The authors making the reports emphasized that previously only in postencephalopathic states had this phenomenon been noted. They also noted the presence of paresthesias within the mouth accompanying the trismus.

Jabbaur and co-workers[7] reported trismus, as well as other neurologic abnormalities, in four children who had received phenothiazine derivatives. Two of them had received amounts greater than suggested, one had taken an unknown amount and one had had only the recommended dosage. One of the three patients reported upon herein (Case 2) had the usually prescribed dosage.

Schering Corporation's brochure on Trilafon® (perphenazine) states: "Significant autonomic side effects have been infrequent in patients receiving less than 24 mg. per day by mouth." While patient in Case 1 in the present report ingested 32 mg. the first day, she took 24 mg. the second and only 8 mg. on the day of onset, or a total dose averaging less than 24 mg. a day. The brochure notes muscle spasm but does not mention trismus as a possible side effect, although "extrapyramidal symptoms have been observed which at times closely simulate those of the Parkinson syndrome." Schering's Division of Clinical Research[11] stated that "although infrequent, episodes of muscle spasm occasionally have been reported in patients receiving phenothiazine including perphenazine. This may occur within the therapeutic dose range but has disappeared following discontinuation of the drug." No statement as to the frequency of trismus was included. We have personal knowledge of at least one other case, in the Los Angeles area, of trismus following the administration of Trilafon.® A reply by Smith, Kline and French to a letter regarding their knowledge of Compazine® and trismus did not specify their experience.

Three cases within three months in one area of Los Angeles would imply a high incidence of trismus. Whether it occurs following the administration of other phenothiazine derivatives[4,9,12] is not known. Extrapyramidal findings, however, are not infrequent with high doses of Thorazine® (chlorpromazine) and occur with lower doses, too, although less frequently.[6,10] The brochure on Sparine® (promazine) states: "Extrapyramidal symptoms resembling Parkinson's syndrome have not occurred in patients receiving Sparine.® However, because of its structural relationship to other phenothiazine derivatives producing such side effects, patients receiving Sparine® therapy should be carefully observed." One can only concur with this statement.

The phenothiazines are known to abolish, as well as cause, muscle spasm, Parkinsonism and other extrapyramidal abnormalities.[1,2,3,8] This paradox has not been explained, although conjecture is not lacking.[1,3]

Epileptic seizures may also complicate phenothiazine administration.[5] Whether trismus medicamentosa (phenothiazine) may be due to such a seizure or whether it may be extrapyramidal in origin is unresolved.

Recognition of trismus as secondary to use of phenothiazine derivatives is important so that an erroneous diagnosis of tetanus may be avoided. The absence of a prior wound, the possible absence between spasms of hyperreflexia (although hyperreflexia has been reported with these compounds[4,7,9]) as well as the absence of abdominal muscle spasm, would make tetanus less likely. Protrusion of the tongue and inability to retract it at will, *may* be characteristic of trismus medicamentosa, but further observation is necessary regarding this.

Burlew[11] said that the following counter measures have been used for the muscle spasm encountered with use of these drugs: barbiturate sedatives; atropine or muscle relaxants; caffeine sodium-benzoate; various antihistamines; anti-parkinson drugs; codeine and/or aspirin; or calcium gluconate.

SUMMARY

Three cases of trismus, one due to perphenazine (Trilafon®) and the other two due to proclorperazine (Compazine®) administration, are presented. Inquiry about the possible prior ingestion of phenothiazines in a patient with trismus is mandatory, so that the patient will not be unnecessarily treated for tetanus.

4849 Van Nuys Boulevard, Sherman Oaks (Marcus).

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For information on preparation of manuscript, see advertising page 2

EDITORIAL

Pharmaceutical Advertising

SENATOR KEFAUVER of Tennessee, a veteran campaigner, has been making headlines in Washington recently with his investigation into the cost and the advertising of pharmaceuticals. Even in the face of TV payola investigations and inter-service conflicts over the assignment of tax billions for ballistic missiles or other weapons of destruction, the coonskin-capped Tennesseean has taken the spotlight at the moment.

News reports and interpretive writings suggest that the senator has two principal complaints against the drug industry. One, that the price of drugs is needlessly high. Two, that the producing or marketing companies spend too much money advertising their products. The second item could well be interpreted as contributing to the first, with the implication that the public is being overcharged for essential products.

Mr. Kefauver's criticisms could lead to endless debates over the economics of advertising. Critics of this form of promoting sales suggest that the price of goods or services could be reduced if the expense of advertising did not have to be recovered in the ultimate sales price. On the other side, those who defend advertising make their case on the fact that advertising broadens the sales market and thus permits greater production at lower unit costs and, subsequently, lower sales prices to the public.

While the pharmaceutical industry may not fit exactly into the textbook pattern of economics, it is certainly affected by the volume of its sales and by its unit costs of production and sales alike. Obviously, full production of any drug item will permit all possible economies in costs, will provide a greater turnover of stocks with consequent financial return on the invested capital, and will lead to the possibility of decreasing prices which must eventually be paid by the public.

The variations of the industry from the economic norm come in the volume of research work which must be performed in order to produce new pharmaceutical items and in the sudden and unpredictable obsolescence of some products. It is easily possible for a firm to spend years of time and millions in money on a research project, only to have its work nullified overnight when a competitor announces something a little better a little sooner.

No brief need be made here for the pharmaceutical industry. The leaders in this field have been established for a number of years and have built their own reputations for honesty, integrity and service. When they advertise, their objective is just as much to keep the corporate name before the eyes of physicians as to promote a particular product in their line.

Neither need a stand be taken in behalf of the institution of advertising. The nation knows the story of William Wrigley, Jr., who amassed a fortune by selling five-cent packages of chewing gum and who advertised lavishly on the simple premise that if he stopped the public would soon forget the Wrigley name.

What the public is interested in—and the medical profession as the guardian of the public health—is the adequacy and the accuracy of pharmaceutical advertising. If Senator Kefauver would restrict his investigation to this facet of the matter, he would gain unlimited professional medical support.

A drug company, be it a large established firm or one of the numerous satellites that bask in the enthusiasm of the moment for a spectacular new product, should be expected to tell the truth about its products. This is especially true when drugs are presented to as critical and well-trained an audience as a group of physicians.

Advertising by its very nature is selling. And selling is inclined to expound on the good and submerge the bad. When this happens with a drug item, we can expect to be told what a new drug will accomplish and to be kept in the dark as to what side effects it may produce or what the contraindications are for its use. Granted that the New Drug Applica-

tion of the Food and Drug Administration and the literature packaged with the product itself cover these points, isn't there always a doctor somewhere with a problem case which has defied conventional treatment who may jump at the chance to effect a cure with something new which is played up as the answer to his prayer?

It is because of just such circumstances that publishers of medical journals have had to take a close look at pharmaceutical advertising in recent years. They welcome the advertising for its financial support; at the same time, they properly value the need for carefully screening it for the benefit of their readers.

This journal is probably more fortunate than many others in that it has maintained an active advertising committee for the past 14 years and has dealt first-hand with the problems emanating from a growing, ambitious and competitive industry. The fundamental requirements of this committee have consistently been that (1) the advertiser give complete information about his product, including formula, contraindications and cautions, and (2) that adequate scientific data be presented to justify the claims made for the product.

Strict adherence to these requirements can, and sometimes does, cause the loss of advertising pages where the advertiser is either unable or unwilling to meet the committee's requirements. When this happens, it is especially disheartening to the committee members to see other reputable medical publications accept the copy which has been rejected here.

Within the past few weeks the American Medical Association has come to grips with this problem and has produced a set of rules and standards which may well become nationwide in scope. The rules state plainly what will be required for the acceptance of advertising copy. They set forth the types of copy which are unacceptable in any circumstances (alcoholic beverages, tobacco, etc.) and they detail the type of supporting material which advertisers may be called upon to supply for favorable consideration of their offerings.

Particularly outstanding in these standards is the emphasis on the *quality* of scientific research which has gone into a product, in contrast with the *quantity* of such work. This requirement, if enforced, will eliminate some claims which are made on "a series of five cases" or comparable investigations.

The medical publisher must welcome new drug products, new uses for old products and new combinations which provide pharmaceuticals for use in additional therapy. These are in line with the rapid strides in the pharmaceutical field of today and are of value to the practicing physician in keeping up with modern therapy. At the same time, the publisher must look to his position of leadership among his readers and must safeguard their interests.

It is hoped that the American Medical Association will apply its new advertising standards with fairness, impartiality and firmness. If this is done, a new standard of excellence in pharmaceutical advertising will be established across the country, a standard which will be known and acceptable to all concerned —publishers, advertisers and advertising agencies. The ultimate beneficiaries will, of course, be the American people.

Letters to the Editor...

The Podiatrist and Medicine

PODIATRY serves the health needs in a specialized field; it has joined medicine and dentistry to bring better health to more people.

A little more than twenty years ago in the *Journal of the American Medical Association*, April 8, 1939, a report of its Judicial Council inferred that the profession of podiatry has much to offer to "medical practice in a limited field."

The San Francisco Medical Society stated, "Podiatry has become identified as an integral part of Medicine and Surgery in a specialized field."

Because Medicine, individually and collectively through its organizations, has long been a guardian of the nation's health and because of our deep interest in the nation's foot health, the American Podiatry Association shall continue to maintain and expand intimate and cordial liaison with medical and related health organizations to further foster mutual understanding.

At a joint conference of the American Medical Association and the American Podiatry Association officials two years ago, arranged by President Allman of the American Medical Association, the field representative of the American Medical Association, Mr. Thomas Hendricks, stressed the importance of acquainting medicine with modern podiatry-chiropody through liaison on the state association level.

In the State of California these past few years the liaison between California Medicine and Podiatry has progressed satisfactorily. In 1957 through the cooperation and advice of medicine a Chiropody Examining Committee within the State Board of Medical Examiners became a reality. The By-

Laws of the California Public Health League were amended to allow for the participation of podiatrists as active members. The profession of podiatry then became members of the Public Health League and the Allied Health Professions. In 1959 our liaison continued to progress with the election of a podiatrist as a councilor in the southern district of the Public Health League.

Podiatry in California is interested in the objectives of the League, among whose purposes are: To educate the public to the proper evaluation of medicine, dentistry, nursing, and the allied sciences; to gain enactment of laws affecting the greater usefulness of ethical medicine, dentistry, nursing, and the allied sciences; to protect the public health by opposing objectionable forms of medical, dental, and public health legislation.

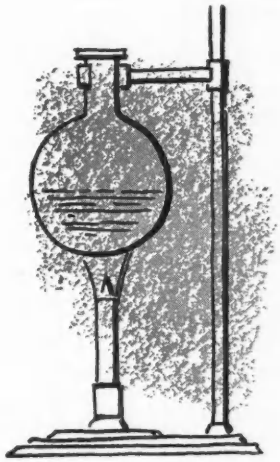
In June 1959 the President-elect of the American Podiatry Association was privileged to have an exhibit at the clinical meeting of the American Medical Association in Atlantic City. Our relations with organized medicine have never been more cordial or on a higher plane.

. . . We not only dedicate but further we now take this opportunity to rededicate our resources to service to the public. As in the past, we shall continue in our private practices and in the institutions we serve, to provide mankind the best possible foot health service and care.

The California Podiatry Association rededicates itself to continuing our intimate and cordial liaison with the California Medical Association, in particular, American Medicine in general, and to the fostering of mutually respectful understanding between its members.

4480 Crenshaw Blvd., Los Angeles 43.

ROBERT SHOR, D.S.C.
Vice President,
American Podiatry Association
Councilor,
California Public Health League.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Warren L. Bostick, M.D., New C.M.A. President-Elect

THE California Medical Association's new president-elect can be said to have come to that station almost by foreordained progression.

Warren L. Bostick, M.D., was president of his class all through medical school and upon his graduation from the University of California School of Medicine in 1939 he was awarded the gold headed cane which symbolizes outstanding aptitude and application in clinical medicine.

Since then he has participated actively in civic affairs and in both the scientific and the executive aspects of his local county medical society, the California Medical Association and the American Medical Association.

He is a pathologist and director of laboratories. He is on the faculty of the University of California School of Medicine, San Francisco, in the Department of Pathology, and is actively engaged in research. He lives in San Rafael and has an office there.

WARREN L. BOSTICK, M.D.

In Marin County, where he entered practice, Dr. Bostick at one time or another served as president of the county medical society, as a member of the society's board of directors for many years and as a member of the society's liaison committee with county supervisors.

For the state medical association, he has been secretary, then chairman of the Section on Pathology and Bacteriology in the annual scientific sessions. At the time of his election as president-elect, Dr. Bostick had been on the C.M.A. Council for eight years. There he became noted among his colleagues for calm analysis, gentle persuasiveness and amiable humor.

Other stations on the new president-elect's route to the highest post in his state medical association have been chairman of the Commission on Public Agencies, chairman of the Committee on Committees and chairman of the Committee on State Medical Services.

On the national level, he is a delegate to the American Medical Association.

Dr. Bostick began life in Texas but at age 3 moved to San Diego, where his father was a Navy physician.

Dr. Bostick is married to the former Virginia Lee of Berkeley, who is a registered nurse. They have two sons, Warren, age 17, and Bruce, 15.

PAUL D. FOSTER, M.D. . . . . President
WARREN L. BOSTICK, M.D. . . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
IVAN C. HERON, M.D. . . . . Vice-Speaker
SAMUEL R. SHERMAN, M.D. . . Chairman of the Council
RALPH C. TEALL, M.D. . . Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D. . . . . Secretary
DWIGHT L. WILBUR, M.D. . . . . Editor
HOWARD HASSARD . . . . . Executive Director
JOHN HUNTON . . . . . Executive Secretary
General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400
ED CLANCY . . . . . Director of Public Relations
Southern California Office:
2975 Wilshire Boulevard, Los Angeles 5 • DUnkirk 5-2341

Actions at C.M.A. Annual Meeting

Members attending the 89th Annual Session of the California Medical Association in Los Angeles, February 20 to 24:

- Installed Dr. Paul D. Foster, Los Angeles, in the presidency.
- Elected Dr. Warren L. Bostick, San Rafael, president-elect.
- Applauded a speech by out-going President T. Eric Reynolds, Oakland, urging a private enterprise solution to the health problems of the over 65 population.
- Heard A.M.A. President Louis M. Orr warn of the dangers inherent in Forand-type legislation.
- Applauded the forceful address of California's Dr. E. Vincent Askey, president-elect of A.M.A.
- Set attendance records at the scientific sections which received exceptional coverage in the California press.
- Acted upon a record number (78) resolutions introduced in the House of Delegates.
- Reaffirmed support of the service concept of Blue Shield Plans.
- Gave support anew to California's nationally acclaimed Relative Value Study.
- Saluted the many years of service of Donald D. Lum, who this year retired as chairman of the Council. (He was elected an alternate delegate to the A.M.A.)
- Recognized Dr. Francis J. Cox, who retired as chairman of the Medical Services Commission, for his contributions to the public and the profession with his work in the industrial accident field and in the continuing development of the Relative Value Study.
- Voted additional funds for enlarged C.M.A. services to members and for an expanded public relations program.
- Set the annual dues at $70 (which includes $10 per member for the American Medical Education Foundation).
- Attended the Presidents' Dinner Dance in record numbers (the Woman's Auxiliary having joined in ticket sales for the first time).

ELECTED OFFICERS

Newly elected officers of California Medical Association are as follows: Dr. Paul D. Foster, Los Angeles, president; Dr. Warren L. Bostick, San Rafael, president-elect; Dr. James C. Doyle, Beverly Hills, speaker, House of Delegates; Dr. Ivan C. Heron, San Francisco, vice-speaker.

Appointments—Dr. Matthew N. Hosmer, San Francisco, secretary, and Dr. Dwight L. Wilbur, San Francisco, editor of CALIFORNIA MEDICINE.

District Councilors

Reelected to C.M.A.'s Council were the following: Drs. William F. Quinn, Los Angeles; Joseph P. O'Connor, Pasadena; and Samuel R. Sherman, San Francisco.

Newly elected Council members are Drs. Wilbur G. Rogers, Glendale; John F. Murray, Fresno; Albert G. Miller, San Mateo; and John G. Morrison, San Leandro. The Council appointed Dr. Carl E. Anderson, Santa Rosa, to fill the unexpired term (1961) of Dr. Warren L. Bostick.

Dr. Sherman was elected chairman of the Council at its organization meeting immediately following the adjournment of the House of Delegates. Dr. Ralph C. Teall, Sacramento, was named vice-chairman.

A.M.A. Delegates, Alternates

(For 2-year terms 1961-1962)

Delegates—Drs. Leopold H. Fraser, Richmond; Arthur A. Kirchner, Los Angeles; Dwight L. Wilbur, San Francisco; J. Norman O'Neill, Los Angeles; J. Lafe Ludwig, Los Angeles; Burt L. Davis, Palo Alto; A. A. Morrison, Ventura; James E. Feldmayer, Exeter; and H. Milton Van Dyke, Long Beach, were named as delegates to A.M.A.

Alternates—Alternate delegates elected were Drs. Hartzell H. Ray, San Mateo; James C. Doyle, Beverly Hills; Francis J. Cox, San Francisco; William F. Quinn, Los Angeles; Samuel R. Sherman, San Francisco; Leon P. Fox, San Jose; Donald D. Lum, Alameda; Ralph C. Teall, Sacramento; Omer W. Wheeler, Riverside.

Dr. Malcolm C. Todd, Long Beach, was elected alternate delegate for the unexpired term of Dr. Kirchner, ending December 31, 1961.

Blue Shield Trustees

Reelected to three-year terms to the board of trustees of C.P.S. were the following: Drs. Dudley M. Cobb, Los Angeles; John R. Hilsabeck, Santa Ana; and John G. Morrison, San Leandro. Mr. Ransom N. Cook, San Francisco, was also reelected.

The two new board members are Drs. Herman H. Stone, Riverside; and William H. Thompson, Burlingame.

Council Meeting Minutes

Minutes of the 455th Meeting of the Council, Hilton Inn, San Francisco Airport, January 9, 1960.

The meeting was called to order by the chairman in the Hilton Inn, located at San Francisco Airport, on Saturday, January 9, 1960, at 9:30 a.m.

Roll Call:

Present were President Reynolds, President-Elect Foster, Speaker Doyle, Vice-Speaker Heron, Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, O'Connor, Shaw, Gifford, Harrington, Davis, Sherman, Campbell, Lum, Bostick and Teall, Secretary Hosmer and Editor Wilbur.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Whelan, Collins, Marvin, Edwards and Salisbury and Doctor Batchelder of CMA staff; county executives Scheuber of Alameda-Contra Costa, Jensen of Fresno, Pettis and Field of Los Angeles, Bannister of Orange, Brayer of Riverside, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Somerville of Napa and Donovan of Santa Clara; Messrs. Paolini and Lyon and Doctor Larsen of California Physicians' Service; Doctor Malcolm Merrill, State Director of Public Health; Doctor John Keye of the State Department of Social Welfare; Doctors Francis E. West and Arlo A. Morrison, past presidents; Doctor Albert Miller and Doctor Henry Brown, president, of the San Mateo County Medical Society; Doctor Roberta Fenlon, president of San Francisco Medical Society; Doctor John G. Morrison, president of Alameda-Contra Costa Medical Society; Doctor Leopold A. Snyder, president of the Fresno County Medical Society; Doctor Dan O. Kilroy, and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 454th meeting of the Council, held December 12, 1959 were approved.

2. *Membership:*

(a) A report of membership as of January 7, 1960, was presented and ordered filed.

(b) On motion duly made and seconded, four delinquent members whose 1959 dues had been received were voted reinstatement.

(c) On motion duly made and seconded in each instance, four applicants were voted Associate Membership. These were: Lawrence H. Winter, Alameda-Contra Costa; Kurt J. Elsbach, Los Angeles County; Burton L. Zinnamon, Sonoma County, Mary Allen, Tulare County.

(d) On motion duly made and seconded, five members were voted a reduction of dues because of illness or postgraduate study.

3. *Unfinished Business:*

On report that the Council had not taken definitive action on a resolution from the 1956 House of Delegates, relating to narcotics addiction, it was duly moved, seconded and voted that this subject be referred to the Commission on Public Agencies for study and report back to the Council.

4. *Report of the President:*

President Reynolds reported on a request received from the National Foundation for nominees for appointment to a scholarship selection committee. On motion duly made and seconded, it was voted to authorize the Chairman of the Council to make such nominations.

5. *Report of President-Elect*

President-Elect Foster presented a check (for $8,800) received from Wyeth Co. to aid in the publication of *Medical Dates Bulletin* by the Committee on Postgraduate Activities. On motion duly made and seconded, it was voted to accept this contribution with thanks and a commendation for this service to the medical profession.

6. *Committee on Finance:*

(a) Chairman Heron of the Committee on Finance presented a proposed budget for the 1960-1961 fiscal year. Following general discussion, it was agreed that several additional detailed reports be made available to the members of the Council so that final action on the budget could be taken prior to the 1960 Annual Session.

(b) Doctor Heron also presented a report of the current financial status, which was ordered filed.

(c) Doctor Heron reported that a request from the Woman's Auxiliary for additional funds for publication of its journal could be met without an additional appropriation.

7. *Committee on Committee Nominations:*

Doctor Bostick reviewed the tentative list of nominations for commission and committee appointments, which is subject to Council and House of Delegates approval. The Chairman stated that the list will be sent to each Councilor and action thereon is deferred to next Council meeting. On motion duly made and seconded, it was voted to appoint the members of the Committee on Traffic Safety as members of a standing committee.

8. *Delegates to A.M.A.:*

The secretary read a letter from Doctor Donald Cass, chairman of the Delegates to the American Medical Association, in which he praised the effectiveness and devotion to duty of the Delegates and Alternates to the A.M.A.

9. *Commission on Medical Services:*

(a) Mr. Hassard reported that Mr. Richard Lyon of California Physicians' Service and several of his associates are visiting county societies to assist them in preparation of data regarding the care of the aged.

(b) Doctor Sherman reported that Doctor Batchelder and Messrs. Whelan and Lyon had reviewed the program for the aged operating in Santa Cruz County and would make a report on it later.

(c) On motion duly made and seconded, it was voted to commend most highly Doctor Francis J. Cox, retiring as chairman of the Commission on Medical Services, for his long and effective services to the Association.

10. *Commission on Community Health Services:*

(a) Doctor MacLaggan reported that the Committee on Traffic Safety wished to be able to call in specialists for consultation on various aspects of its program. On motion duly made and seconded, authority to expand the consultation services of the committee was voted.

(b) A request for Association representation on a voluntary organization for rehabilitation was received and it was agreed that the Committee on Rehabilitation arrange to evaluate the organization and its program.

(c) A report on the medical needs of farm labor was presented and discussed. On motion duly made and seconded, it was voted to accept limited portions of this report as policy and to allow the use of other portions for information and discussion purposes. The sections approved as policy found that farm labor in California today is no longer migratory, that former migrants have now achieved citizenship and should not be separated from other welfare cases when in financial need. Mexican nationals, who are migratory, were not included in this consideration.

11. *Governor's Commission on Health Needs:*

Report was made that the Governor's Commission on the Health Needs of California, of which Doctors Reynolds and Foster are members, would meet soon and that the two CMA representatives would probably need staff assistance. On motion duly made and seconded, it was voted to provide Doctors Reynolds and Foster with all indicated staff assistance.

On motion duly made and seconded, it was voted to establish an advisory committee to Doctors Reynolds and Foster in this activity, the Council chairman to name such committee. The chairman named Doctors Lum, Sherman, West and Kilroy to this body.

12. *Commission on Public Policy:*

Doctor Kilroy reported that two measures would soon be under consideration for legislative action relating to health insurance coverage for State employees. One would provide for state contributions to health insurance costs for employees, the other to establish a state commission to regulate the type of coverage to be purchased. On motion duly made and seconded, it was voted that the Council reaffirm its earlier policy in support of the State contributing *as an employer* to the cost of health insurance for State employees.

A report with recommendations for the conduct of physicians in hospitals, developed by a joint committee of the Association and the California Hospital Association, was presented. On motion duly made and seconded, it was voted to approve in principle the "Guiding Principles—Hospital Relationships" subject to further clarification in the implementation portion at the close of the report.

Doctor Kilroy also presented an outline of a public relations program, together with its estimated cost, in response to Resolution No. 18 of the 1959 House of Delegates, which was referred to the Commission on Public Policy for study and report to the Council.

On motion duly made and seconded, it was voted to table any Council action at this time on a recommendation on this report.

On motion duly made and seconded, it was voted to authorize the Commission on Public Policy to present this outline to the 1960 House of Delegates.

13. *Commission on Professional Welfare:*

Doctor Kirchner reported that the Committee on the Private Practice of Medicine in Medical Schools had taken no further action on a situation referred to it from Santa Clara County, since it was felt that the matter had been adequately resolved at the local level.

14. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, reported on a serious outbreak of rabies in Imperial County, on which state authorities are working with Mexican authorities in controlling rabid dogs in the border area.

Doctor Merrill also reported that California had registered 430 cases of poliomyelitis in 1959, only 17 of which were fatal. Of the fatalities, one was a person who had had a course of three injections of Salk vaccine. The vaccine, he reported, was still regarded as about 85% effective where three injections are given.

15. *California Physicians' Service:*

Doctor Arlo A. Morrison gave a progress report on California Physicians' Service, which showed 781,000 members at the close of 1959, or some 45,000 more than a year earlier. Employees at the year-

end totaled 635, compared with 718 at the end of 1958, and total administrative costs were 10.5% of income. CPS is now handling 58,000 claims monthly and in 1959 only 1,100 claims were deemed questionable enough to be referred to county review committees.

California Physicians' Insurance Corp., Doctor Morrison reported, now has an income of more than $1,100,000 annually.

16. *Legal Department:*

Mr. Hassard reported that several By-Law amendments voted by the Council had been prepared and would be introduced in the 1960 House of Delegates as emanating from the Council. He also reported that two suits pending against the Association or its officers were still before the courts but not endangering the CMA or its officers at this time.

17. *Hospital Construction Requirements:*

Doctor MacLaggan presented a resolution from a member in San Diego County, who asked that a review be made of rules and regulations governing fire safety provisions for certain equipment installed in hospitals. On motion duly made and seconded, it was voted to refer this to the Liaison Committee with the California Hospital Association.

18. *Veterans' Administration:*

On motion duly made and seconded, it was voted that the Council urge the American Medical Association to investigate the policies of the Veterans' Administration as to admissions, construction programs and other matters.

19. *1960 House of Delegates:*

Speaker Doyle reported that the proposed report of the Committee on Social Security Poll Format would be presented to the House of Delegates for decision.

Doctor Doyle also announced that the presidents of allied organizations would be invited to attend the opening session of the House of Delegates.

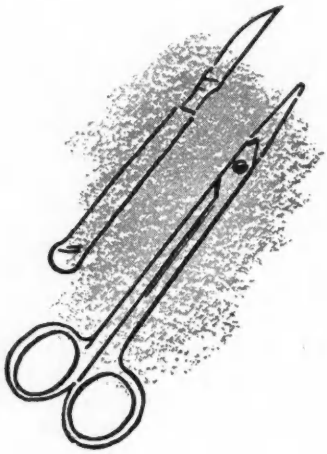
20. *Council Meeting Dates:*

On motion duly made and seconded, the Council approved a *proposed* schedule of Council meetings for 1960 which called for ten meetings during the calendar year.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:20 p.m.

DONALD D. LUM, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*



10th ANNIVERSARY

POSTGRADUATE INSTITUTE

SOUTHERN COUNTIES

Presented by Stanford University School of Medicine, Lowell A. Rantz, M.D., Associate Dean and Director of Postgraduate Medical Education, and California Medical Association Committee on Postgraduate Activities.

Riviera Hotel, Palm Springs

April 21-22, 1960

PROGRAM

THURSDAY, APRIL 21

Morning Session

9:30-10:15—**Diagnosis of Adrenal Disorders**—Thomas August, M.D.

10:15-11:00—**Physiology of the Endocrine Glands**—Alan K. Done, M.D.

11:15-12:30—**Two Concurrent Panels** (you may go to the one of your choice).

PANEL 1—Sex and the Adrenals.

PANEL 2—Use and Abuse of Adrenal Steroids.

Afternoon Session

2:00-2:45—**Fundamentals of Intestinal Absorption**—Raymond M. Kivel, M.D.

2:45-3:30—**Pancreatic Insufficiency**—Louis Gluck, M.D.

3:45-5:00—**Two Concurrent Panels** (you may go to the one of your choice).

PANEL 1—Malabsorption Syndromes in Adults.

PANEL 2—Malabsorption Syndromes in Children.

6:30-7:30—**No-Host Cocktail Party.**

7:30-10:00—**Dinner** (wives invited).

Social Dimensions of Health and Disease—Edmund H. Volkart, Ph.D.

FRIDAY, APRIL 22

Morning Session

9:30-10:15—**Renal Physiology in the New Born**—Sumner Yaffe, M.D.

10:15-11:00—**Pyelonephritis**—Lowell A. Rantz, M.D.

11:15-12:30—**Two Concurrent Panels** (you may go to the one of your choice).

PANEL 1—Medical Disease of the Kidney.

PANEL 2—Disturbances of Body Fluids in Renal Diseases.

Afternoon Session

2:00-2:45—**Medical Management of Lymphoma**—William P. Creger, M.D.

2:45-3:30—**Radiotherapy of Lymphoma**—Malcolm A. Bagshaw, M.D.

3:45-5:00—**Two Concurrent Panels** (you may go to the one of your choice).

PANEL 1—Specific Problems in the Treatment of Lymphoma.

PANEL 2—Diagnosis and Treatment of Erythroblastosis.

HOST: Riverside County Medical Association . . . **REGIONAL CHAIRMAN:** Robert M. Zweig, M.D., 7004 Magnolia, Riverside. **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

In Memoriam

CORRECTION: The February issue of CALIFORNIA MEDICINE contained, by error, a notice of the death of Joseph Harvey Marcus of Los Angeles. Dr. Marcus is still in practice in Los Angeles.

A Dr. Joseph H. Marcus did die at the time reported, but he was a retired physician, who dwelt but did not practice in Los Angeles.

The error came about through a misreading of adjacent entries in the A.M.A. Medical Directory.

BABCOCK, CLAUDE ELLIOTT. Died in Los Angeles, January 26, 1960, aged 52, of coronary occlusion. Graduate of College of Medical Evangelists, Loma Linda-Los Angeles, 1934. Licensed in California in 1936. Doctor Babock was a member of the Kern County Medical Society.

✤

BARKER, JOSEPH MICHAEL. Died in Washington, D. C., January, 1960, aged 49, of heart disease. Graduate of Georgetown University School of Medicine, Washington, D. C., 1939. Licensed in California in 1955. Doctor Barker was a member of the Los Angeles County Medical Association.

✤

BUCKNAM, RALPH WALDO EMERSON. Died January 29, 1960, aged 87. Graduate of Bowdoin Medical School, Brunswick-Portland, Maine, 1895. Licensed in California in 1908. Doctor Bucknam was a life member of the Los Angeles County Medical Association.

✤

COBBS, PETER PRICE. Died in Los Angeles, February 1, 1960, aged 69, of injuries from an auto collision. Graduate of Howard University College of Medicine, Washington, D. C., 1919. Licensed in California in 1923. Doctor Cobbs was a member of the Los Angeles County Medical Association.

✤

CUMMINS, JOSEPH L. Died September 18, 1959, aged 57, by drowning. Graduate of College of Medical Evangelists, Loma Linda-Los Angeles, 1941. Licensed in California in 1945. Doctor Cummins was a member of the Los Angeles County Medical Association.

✤

DRAKE, JAMES CARL. Died in Fresno, October 7, 1959, aged 76, of generalized lymphosarcoma. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1911. Licensed in California in 1918. Doctor Drake was formerly a retired member of the Fresno County Medical Society and the California Medical Association and an associate member of the American Medical Association.

✤

EALY, JOHN TAYLOR. Died in Hohenwald, Tennessee, January 19, 1960, aged 42, in an airplane crash. Graduate of Temple University School of Medicine, Philadelphia, Pennsylvania, 1941. Licensed in California in 1951. Doctor Ealy was a member of the Los Angeles County Medical Association.

✤

GRAMLICH, HENRY FRANK. Died in Long Beach, February 4, 1960, aged 62. Graduate of the University of Buffalo School of Medicine, Buffalo, N. Y., 1920. Licensed in California in 1921. Doctor Gramlich was a member of the Los Angeles County Medical Society.

HOLZMAN, EARL E. Died in Pacific Palisades, January 28, 1960, aged 35, by electrocution in a home accident. Graduate of University of Wisconsin Medical School, Madison, 1948. Licensed in California in 1949. Doctor Holzman was a member of the Los Angeles County Medical Association.

✤

INMAN, THOMAS GEORGE. Died in San Francisco, January 10, 1960, aged 87. Graduate of Cooper Medical College, San Francisco, 1894. Licensed in California in 1894. Doctor Inman was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

MURRAY, LEO CHARLES. Died January 29, 1960, aged 60. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1924. Licensed in California in 1943. Doctor Murray was a member of the Los Angeles County Medical Association.

✤

NAECKEL, HAROLD WILLIAM. Died in Los Angeles, January 29, 1960, aged 62. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1925. Licensed in California in 1930. Doctor Naeckel was a member of the Riverside County Medical Association.

✤

PLANNETTE, HERBERT LESLIE. Died January 12, 1960, aged 83. Graduate of University of Wooster, Medical Department, Cleveland, Ohio, 1905. Licensed in California in 1915. Doctor Plannette was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

POTEKIN, JESSE SANFORD. Died January, 1960, aged 55. Graduate of University of Minnesota Medical School, Minneapolis, 1931. Licensed in California in 1946. Doctor Potekin was a member of the Los Angeles County Medical Association.

✤

QUATTLEBAUM, LEON. Died in San Pedro, January 25, 1960, aged 36. Graduate of University of Arkansas School of Medicine, Little Rock, 1946. Licensed in California in 1954. Doctor Quattlebaum was a member of the Los Angeles County Medical Association.

✤

RICHARDSON, ARTHUR L. Died in Arcadia, January 4, 1960, aged 57. Graduate of University of Michigan Medical School, Ann Arbor, 1932. Licensed in California in 1933. Doctor Richardson was a member of the Los Angeles County Medical Association.

✤

SNELL, ALBERT MARKLEY. Died in Palo Alto, February 6, 1960, aged 64, of heart disease. Graduate of University of Minnesota Medical School, Minneapolis, 1918. Licensed in California in 1947. Doctor Snell was a member of the Santa Clara County Medical Society.

✤

TITUS, JEROME HILL. Died in Ontario, February 8, 1960, aged 83. Graduate of Rush Medical College, Chicago, 1900. Licensed in California in 1914. Doctor Titus was a member of San Bernardino County Medical Society.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

IN 1959 there were 43 cases of tetanus reported in California, with 22 deaths. Victims of tetanus are urban-suburban residents and not the "traditional" rural dweller commonly associated with the disease.

A study of data on the nature of injury and type of wound indicates the majority of the cases occurred as the result of home puttering. According to the Bureau of Acute Communicable Diseases, the most frequent injuries associated with tetanus were puncture wounds caused by nails, toys, and splinters in the course of home repair work, gardening and yard cleaning. Another common injury was laceration of fingers while operating power lawn mowers. Other reports of injuries noted in connection with tetanus were: "Cut hand in electric fan blades," "caught hand in food chopper," "sores on hand while repairing house," "laceration of arm on lawn sprinkler," "dropped furniture on foot," and "finger caught in washing machine wringer."

The cases were reported from urban areas such as Los Angeles, Pasadena, Long Beach, Sacramento, Alameda and Santa Barbara.

More than 90 per cent of the patients either had never been immunized with tetanus toxoid or had not received a booster injection within five years of onset.

The causative organism of tetanus is a natural inhabitant of soil and of the intestinal tract of man and animals, so perpetual reseeding of these organisms occurs in man's environment.

Universal immunization with tetanus toxoid provides the potential means of protection. The occurrence of tetanus can be considered to be the result of what has been termed "unassimilated progress." An effective vaccine is available, but it has not been used on the broad scale desirable for protection of the civilian population. The armed services routinely protect their personnel by tetanus immunization.

* * *

By mid-February influenza and the attendant ills of wintertime had not seriously invaded northern California, and were reported on the wane in the southern sector of the State. Influenza A, the Asian strain, was identified in many areas of California in the department's Viral and Rickettsial Disease Laboratory.

It left in its wake in Los Angeles, however—an exceedingly high number of deaths in older people attributed to influenza and pneumonia, particularly the latter. During the four weeks in January deaths numbered 35, 80, 102 and 159. Approximately two-thirds of the deaths were reported from Los Angeles County and City, and 54 per cent of those who died were persons over the age of 70. The number of deaths in that month is substantially higher than for any week recorded during the outbreak of Asian influenza in 1957-58.

* * *

A report on the health of California's older people was published recently and distributed to agencies and individuals concerned with the health aspects of aging. The report appears at a time when interest is high in the entire problem of aging, as evidenced by the plans for the Governor's Conference on Aging in California this year, and for the White House Conference on Aging in 1961.

The report covers mortality in the older age group, nature and extent of illnesses, the medical care they receive, special health problems of older people, and current efforts to meet them.

Copies of the report may be obtained on request to the Bureau of Chronic Disease, State Health Department, 2151 Berkeley Way, Berkeley.

* * *

A documentary film has just been completed showing some of the adverse after-effects of Western Encephalitis on infants and young children. The film is based on findings of the Encephalitis Clinical Followup Study, a research project of the Stanford University School of Medicine and the State Department of Public Health.

The film shows 20 children who have been examined in the followup study clinics. The children shown who had Western Encephalitis before the age of four months emphasizes the severe, permanent damage caused by this virus infection when it occurs in very young infants. Pictures of other children who were past infancy when they had Western Encephalitis illustrate that older children also may be left with permanent motor and intellectual impairment.

The film can be borrowed from the departmental film library in the Bureau of Health Education.

* * *

As of November 1, 1959, 1,850 communities in the nation serving 36,138,430 people were fluoridating their water supplies. In addition,there were more

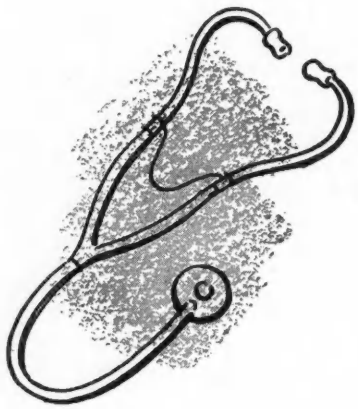
than seven million people in 1,903 communities using water supplies with a natural floride content at the approximate recommended level.

In California, 27 communities have approved fluoridation and 19 of these are presently supplementing their water supplies with fluorides. The largest community fluoridating in California is San Francisco.

In all, approximately 1,200,000 people are receiving water supplemented with fluoride. In addition, about three million people in California are ingesting water whose natural fluoride content ranges between 0.3 and 2.0 parts per million. The largest community having natural occurring fluorides in its water supplies is Los Angeles.

Several cases of food poisoning due to chemicals have been investigated by the department recently. Similarities in the cases were noted in incubation time, type of onset, clinical symptoms and duration. In each case a commercial dehydrated fruit beverage had been prepared in a metal container. Containers used were a copper kettle, an old tin-lined copper pitcher, and a galvanized iron container. After mixing, the drinks were allowed to stand in these metal containers for some time.

Fruit acids are known to have a particularly corrosive action on copper, zinc, pewter and other such metals. For this reason containers used for mixing fruit juice beverages should be of glass, plastic, crockery, or unchipped enamel ware.



WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

THE THIRTIETH annual Convention held in February at the Ambassador Hotel in Los Angeles brought to a close the 1959-1960 State Auxiliary year.

Membership

Our membership as of January 15th had reached 6,606, and with four and a half months remaining in the National Auxiliary's fiscal year we may well exceed the 7,000 mark this year.

Much credit is due our membership chairman, Mrs. Warren Bostick, first vice-president of the Woman's Auxiliary to the California Medical Association for 1959-1960. She obtained the names of the doctors' wives in the counties where there is no auxiliary and wrote to 187 women, inviting them to become members-at-large of the State Auxiliary. Through her efforts we now have 12 of our 15 unorganized counties represented by members-at-large. As we recruit new members for the auxiliary we expand our efforts and increase our potential for helping organized medicine.

A.M.E.F. Contributions

A report from the State American Medical Education Foundation chairman, on February 8, showed that approximately $9,500 had been received for A.M.E.F. from the combined county auxiliaries.

Our Nurse Recruitment program was expanded this year to include para-medical careers. Auxiliaries have been encouraged to sponsor the type of club that is best suited to their own community needs. Our objective is to provide all high schools with guidance, scholarship information and program material. In this way, we hope to provide students with the means of selecting the career that is best suited to their abilities.

Future Nurse Clubs

There are over 200 Future Nurse and Career clubs sponsored by the medical auxiliaries in California with a membership of approximately 10,000 students.

The Oakdale Future Nurse Club, sponsored by the Woman's Auxiliary to the Stanislaus County Medical Society, was the first club in California to receive a national charter for a Future Nurse Club. For this reason, the Oakdale Club has been asked to select one of its members to be a delegate from California to the White House Conference on Children and Youth to be held in Washington, D. C., March 27-April 1, 1960. There will be four Future Nurse Club members at the Youth Conference, one from each region of the United States.

It is an honor to have had a representative from one of *our* Future Nurse Clubs in California chosen to attend this meeting.

Physicians' Benevolence

Since 1941 the Woman's Auxiliary has been contributing to the Physicians' Benevolence Fund. Over $2,000 has been received this year from the county auxiliaries for Physicians' Benevolence.

To better acquaint the auxiliary members and interested doctors with the facilities and care given at the Physicians' Aid Home in Los Angeles, the Board of Directors of the Physicians' Aid Association held open house on February 22, from 5 to 7 p.m. The home is supported by the entire medical profession—as an investment in security—not a charity. Incidentally, gifts to the Physicians' Aid Home are tax-deductible.

Program for Aging

Our new project this past year was aiding the California Medical Association in its program for the aging.

Some of the county auxiliaries laid the groundwork for "Visiting Homemaker Service" in their communities to aid this program. The Community Homemaker Service is a locally sponsored, nonprofit agency that places trained workers in homes where illness, disability or the absence of a parent might disrupt the normal family routine. They take over the household tasks such as marketing, cooking, light cleaning and caring for children. Service is part-time only for as long as needed. No nursing care is given by the homemaker.

The American Medical Association's interest in Homemaker Service was evident in February, 1959, when the Association played a key role in promoting and financing the first nationwide conference on homemaker services in Chicago.

The patient or family pays a central office an established fee per hour for the time the homemaker works, plus transportation costs.

Before organizing a visiting Homemaker Service in a community, approval of the medical profession and allied groups must be obtained.

There are only 150 such services in 3,100 counties in the United States, others are in the process of being set up.

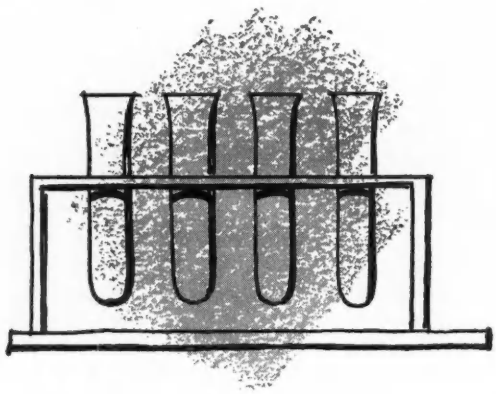
Valedictory

Thus the combined efforts of the 34 organized county auxiliaries in California have continued to carry out our most important objectives: to assist the California Medical Association in its program for the advancement of medicine and public health and to promote better public relations.

It has been a privilege and pleasure to work with the C.M.A. during the year and to have had this page in CALIFORNIA MEDICINE to tell our auxiliary story to all the members.

My sincere thanks to the Advisory Board and the staff of the C.M.A. office for their assistance this past year.

MRS. THEODORE A. POSKA
President, Woman's Auxiliary to the California Medical Association



INFORMATION

Guides for Medical Education Efforts by the Drug Industry

IN THE INTEREST of providing a guide for the pharmaceutical industry so that its efforts to further medical education shall follow the highest standards, the following general principles have been established by the Pharmaceutical Manufacturers Association and the Association of American Medical Colleges:

Surveys of medical students by questionnaire or other form made by the industry or members thereof, rarely result in the furtherance of medical education. The Association of American Medical Colleges is available for consideration of exceptions to this general statement and should be consulted to determine whether an exceptional survey is in keeping with these general principles.

Non-educational entertainment (such as cocktail parties, steak dinners, etc.) does not further medical education and such entertainment should not be requested by students or faculty or suggested by members of the industry.

Awards and prizes. Funds or other awards intended as recognition of a high order of scholarship or of research achievement of students or faculty members are an effective means of furthering medical education. The interest of the recipient is best served through his uninfluenced selection by his medical school and by the omission of photographs or press releases by the donor.

Lectures at institutes of learning, established by members of the pharmaceutical industry constitute a means of bringing special information to medical students and therefore are of value in medical education. The final choice of individual speakers should be made by the medical school concerned, in the interest of providing the best possible source of information on a specific subject.

Visits to pharmaceutical laboratories constitute a source of medical education which is not available in medical colleges. The visits are therefore considered worthwhile but the general principles regarding entertainment (except for necessary meals), printed literature and drug samples should apply to the occasion of such visits.

The release of information regarding research products prior to their acceptance by the medical profession is not in the best interest of the American public. Such releases are discussed in the "Statement of Principles of Ethical Drug Promotion," adopted by the Pharmaceutical Manufacturers Association, May 24, 1958. Because of this general principle, press releases on unestablished drugs should not be made by members of the industry or by medical colleges. In addition, press releases on established drugs when students or faculty members of a medical college are involved, should follow the established practices of the medical college concerned.

Television or radio productions involving medical colleges or research efforts in such colleges should be invariably presented in a way that the greatest possible degree of medical education is obtained from the production. Unnecessary dramatization or other accent of material which does not provide educational information is discouraged and to be avoided.

Printed literature of pharmaceutical manufacturers is frequently of considerable value in medical education. The use of educational literature by students is encouraged but the interest of the student is best served by its distribution through a qualified official of the medical school concerned.

Drug specimens are an important part of the education of a medical student. However, it is illegal for a student to receive prescription drugs for other than study purposes, which study should be conducted in his formal class sessions. For this reason, prescription drug samples should be made available for use by students only through a qualified official of the medical college concerned.

The above paragraphs cover subjects which are representative of certain specific undesirable practices although the list is by no means exhaustive. In general, as a basic guiding principle, both the medical educators and the leaders of the pharmaceutical industry can agree that any act, practice or policy which tends to result in the exploitation of the medical school, educator or student for commercial or selfish consideration is undesirable. Therefore, there can be no furthering of such acts, practices or policies by anyone who is truly interested in the future health and strength of medical education.

Additions to or modification of these general principles should result from continuing conference between designated members of the two associations concerned.

Medicare Changes

The office of Dependents Medical Care of the Department of Defense has issued the following instructions:

DD 1173, Uniformed Services Identification and Privilege Card

As of April 1, 1960, Medicare claims may be processed for services rendered eligible Medicare dependents when the DD 1173, Uniformed Services Identification and Privilege Card, has not been furnished a physician's office by the dependent. In those instances where the DD 1173 is not available, the Medicare billing DA 1863 must be documented in one of the following ways in order for payment to be made:

1. Emergency Cases

The claim form must contain a statement by the attending physician certifying that the case was an emergency and must be accompanied by one of the following types of identification:

a. A statement by the local military Commander that the patient was a Medicare dependent eligible for care in civilian facilities during the period covered by the billing.

b. Any other official uniformed services document reflecting that the patient was a Medicare dependent eligible for care in civilian facilities during the period covered by the billing.

c. A statement of the physician or hospital authority that he has personal knowledge that the patient was a Medicare dependent eligible for care in civilian facilities during the period covered by the billing.

d. Other civilian type identification such as a social security card, driver's license, etc., which identifies the

dependent signing the billing form. Physicians' offices should make sure that the name of the identification document is the same as that signed on the claim form by the dependent.

e. When a claim is submitted without information from the DD 1173, the reason as to why the card is not available should be furnished.

2. Nonemergency Cases

When the DD 1173 is not available at the time of commencement of care and an emergency does not exist, the dependent may commence receiving care as a potential beneficiary, but before payment can be made the claim must be documented in one of the following manner:

a. A statement from a military official authorized to issue the DD 1173 may be attached to the billing form, indicating that the patient was eligible for Medicare benefits during the period covered by the billing. This statement must include name, rank or grade, and position of the issuing official and a statement that he is authorized to issue the DD 1173.

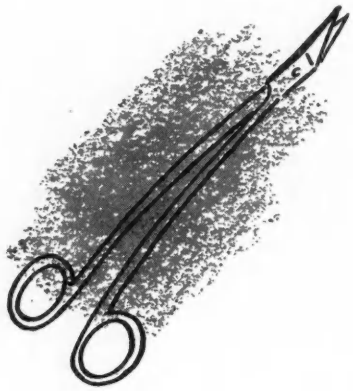
b. When the issue date of the DD 1173 is later than the date the care commenced, it is necessary that a letter from a military official authorized to issue the DD 1173 be attached, indicating that the patient was eligible for Medicare benefits during the period covered by the billing.

Procurement of Blood

In those instances when blood is not available to Medicare dependents on a gratuitous basis, reimbursement will be made for the purchase of the required amounts. In instances where blood must be purchased, the billing should be made on the hospital claim, not on the physician's billing.

Non Availability Statement

The Medicare permit (DD Form 1251), which is issued by military bases when civilian care is requested for dependents residing with the serviceman, is being changed to read "NON AVAILABILITY STATEMENT, DEPENDENTS' MEDICAL CARE PROGRAM." DD Forms 1251 bearing either of these titles are equally acceptable.



NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

The California State Department of Public Health at Berkeley has received a grant of $53,026 from the U. S. Public Health Service for setting up a **county cancer registry.** The grant is one of nine totalling $321,894 made by the Public Health Service in a program seeking to shorten the interval between discoveries in cancer research and the application of the benefits of the findings at the community level.

LOS ANGELES

Dr. J. Vernon Luck, Los Angeles, was elected president of the American Academy of Orthopaedic Surgeons at the recent annual meeting of the organization in Chicago.

* * *

The School of Medicine of the University of Southern California recently was awarded a grant of $120,000 by the Southern California chapter of the Arthritis and Rheumatism Foundation to be used for **expansion of medical training and research in rheumatic diseases.** In a statement acknowledging receipt of the grant, Dr. Clayton Loosli, dean, and Dr. Thomas Brem, head of the department of medicine, said that the money was to be used for a new department of rheumatology.

MENDOCINO

Announcement of the appointment of **Dr. Ernest W. Klatte** as superintendent of Mendocino State Hospital has been made by Dr. Daniel Blain, director of the California State Department of Mental Hygiene. Dr. Klatte had been associate superintendent.

SAN DIEGO

Dr. Bertram E. Marks, who resigned a year ago, has returned to the San Diego Department of Public Health as chief of the Bureau of Acute Communicable Disease Control to take the place of **Dr. Leon L. Gardner,** who recently resigned because of ill health.

Dr. Sidney B. Clark, assistant director of the department, resigned to become chief of preventive medicine for the United States Government in the Panama Canal Zone.

SAN FRANCISCO

A grant of $90,000 spread over a five-year period has been awarded by the National Institutes of Health to support **studies on the role of stress in heart disease** that are being carried out by Dr. Meyer Friedman and associates at the Harold Brunn Institute for Cardiovascular Research.

SANTA CLARA

Announcement of three new **appointments to the faculty of Stanford University School of Medicine,** effective July 1, was made recently by Wallace Sterling, president of the University. They are:

Dr. William K. Hamilton, now chairman of the division of anesthesiology at the College of Medicine, State University of Iowa, as professor of surgery (anesthesiology).

Dr. C. Howard Hatcher, now head of the division of orthopedic surgery at the University of Chicago, as professor of surgery (orthopedic).

Dr. Harry A. Oberhelman, Jr., now associate professor of surgery and secretary to the department at the University of Chicago, as associate professor of surgery.

GENERAL

Dr. Francis E. West of San Diego, a past president of the California Medical Association, and **Dr. James V. McNulty** of Los Angeles have been appointed to the California State Board of Medical Examiners by Governor Edmund G. Brown. They replace Dr. Daniel W. Sooy of Laguna Beach and Dr. Frederic N. Tryoler of Los Angeles, whose terms expired.

* * *

The National Health Education Committee has announced the availability of a pamphlet titled **A Statement on Arteriosclerosis,** written by a group of eight experts on the subject, for distribution by physicians to patients. The Committee said the statement was prepared as a simple guide to "give the average man and woman something he or she could do in cooperation with the physician to minimize the hazards of arteriosclerosis."

The following physicians are the authors: Louis N. Katz, Samuel L. Levine, Irvine H. Page, Howard B. Sprague, Jeremiah Stamler, Frederick J. Stare, Paul Dudley White and Irving S. Wright.

Copies are available from Miss Jane E. McDonough, executive secretary of the committee, 135 East 42nd Street, New York 17, N. Y.

* * *

The California Medical Assistants' Association has announced that the last of its educational symposia for the current year will be held in Sacramento, March 27, at the El Dorado Hotel on Highway 40 east. Richard C. Ripple, M.D., President of the Sacramento Society for Medical Improvement, will make the welcome speech. Further information may be obtained from Katherine Enns, P. O. Box 312, Davis, California.

The C.M.A.A. annual convention will be held at the Hotel Claremont in Berkeley April 22 and 23, at which time a new schedule of symposia will be worked out, one to be held each month of the following year. Information about the convention may be obtained from Anne Reece, president, 1837 South Indiana Street, Porterville.

SEE BRIEF NOTES

on

C.M.A. Annual Session Highlights

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POSTGRADUATE
EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Geriatrics in Clinical Practice. Saturday and Sunday, March 19 and 20. Twelve hours. Fee: $40.00 (includes Sunday lunch).

Emotional Problems in Pediatric Practice. Friday through Sunday, April 8 through 10. University of California Residential Conference Center, Lake Arrowhead. Thirteen hours. Fee: $110.00 (including room and meals).

Postgraduate Medical Symposium. Grossmount Hospital, La Mesa. Saturday and Sunday, April 30 and May 1. Twelve hours. Fee: $25.00.

Management of Medical Emergencies. Friday and Saturday, May 6 and 7. Twelve hours.*

SURGICAL ANATOMY. Friday through Monday, June 24 through 27.

Head and Neck. Friday, June 24. Fee: $40.00.†

Thorax, Abdomen and Pelvis. Saturday and Sunday, June 25 and 26. Fee: $80.00.†

Extremities. Monday, June 27. Fee: $40.00.†

General Pediatrics. Sunday through Wednesday, July 17 through 20. Lake Arrowhead, University of California Residential Conference Center. Sixteen hours. Fee: $137.50 (including room and meals).

Advance Seminar in Internal Medicine. Wednesday through Sunday, July 20 through 24. University of California Residential Conference Center, Lake Arrowhead. Eighteen hours. Fee: $150.00 (including room and meals).

Dermatology in Office Practice. Monday and Tuesday, July 25 and 26. Twelve hours.*

Seminars in Dermatology (for Dermatologists). Wednesday through Saturday, July 27 through 31. University of California Residential Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (including room and meals).

Anesthesia for Special Procedures. Wednesday, Thursday and Friday, August 3, 4 and 5. Eighteen hours.*

Arthritis and Rheumatism. Friday and Saturday, August 19 and 20. Twelve hours.*

Obstetrical Procedures and Complications. Thursday and Friday, August 26 and 27. Twelve hours.*

*Fees to be announced.
†Hours to be announced.

For Ancillary Personnel

Fifth Regional Conference for Nurses. Sunday through Wednesday, June 12 through 15. Thirty-two hours. Fee: $80.00.

The College Nurse: New Concepts in Her Profession. Friday and Saturday, June 17 and 18. Twelve hours. Fee: $20.00.

9th Annual Symposium in Clinical Laboratory Technology. Saturday and Sunday, June 18 and 19. Sixteen hours.*

Workshops for School Nurses:

Riverside, Tuesday through Saturday, June 21 through 25. Forty-five hours. Fee: $40.00.

Los Angeles, Tuesday through Saturday, July 5 through 9. Forty-five hours. Fee: $40.00.

San Diego, Wednesday through Sunday, July 13 through 17. Forty-five hours. Fee: $40.00.

Contact: Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Medical Evening Series (Eden Hospital, Castro Valley). Tuesdays, March 22 to May 10. Sixteen hours. Fee: $35.00.

Physiological Basis for Diagnosis and Treatment. An Official Course of the American Physiological Society. Wednesday through Sunday, March 30 through April 3. Thirty-five hours. Fee: $90.00 or $25.00 per day.

Course on Amblyopia. Monday through Wednesday, April 11 through 13. Twenty-one hours.*

Neuropsychiatry in General Practice (Napa State Hospital). Thursday evenings, April 21 through May 26. Fee: $5.00.

Symposium on Pediatric Surgery (Children's Hospital). Saturday, April 23. Seven hours. Fee: $12.50.

A Course on General Surgery. Monday to Friday, April 25 to 29. Thirty-five hours. Fee: $100.00.

A Course on Urology. Thursday and Friday, May 5 and 6. Fourteen hours.*

A Course on Ear, Nose, Throat. Thursday to Saturday, May 12 to 14. Twenty-one hours.*

Proctology. Thursday and Friday, May 19 and 20. Fourteen hours. Fee: $40.00.

Advances in Surgical Anatomy, Normal Anatomy and Histology of the Eye. Thursday to Saturday, June 2 to 4. Twenty-one hours.*

A Course on the Foot. Thursday to Saturday, June 9 to 11. Twenty-one hours.*

A Course in Industrial Medicine. Wednesday to Friday, June 22 to 24. Twenty-one hours.*

A Course on New Drugs. Thursday to Saturday, July 14 to 16. Twenty-one hours.*

Obstetrics and Gynecology. Thursday to Saturday, September 15 to 17. Twenty-one hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For Ancillary Personnel

Rehabilitation Nursing. Monday through Friday, April 11 through 29. Fairmont Hospital, San Leandro.*

Evening Lectures on Pharmacy. Mondays, April 18 to May 23.*

Nursing Care of Mothers and Children. Tuesdays, April 19 through June 7, Highland Hospital, Oakland. Sixteen hours. Fee: $25.00.

Nursing Care of Medical-Surgical Patients. Thursdays, April 21 through June 9. Highland Hospital, Oakland. Sixteen hours. Fee: $25.00.

Nursing and People. Monday to Friday, May 2 to 13.*

Understanding the Adolescent for Nursing Care. Monday through Wednesday, May 9 through 11.*

Human Relations in the Modern Hospital. Monday through Friday, June 13 through 17.*

Integration of Psychiatric Principles in the Total Curriculum. Tuesday to Friday, July 5 to August 12.*

Administration of Nursing Care. Tuesdays, September 13 through December 13.*

Contact: Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

STANFORD UNIVERSITY SCHOOL OF MEDICINE, PALO ALTO

Emotional and Social Aspects of Child Health in Pediatric Practice. June 13 through 24. *Contact:* Hale F. Shirley, M.D., Professor of Pediatrics and Psychiatry, Stanford Medical Center, 300 Pasteur Drive, Palo Alto, Calif.

STANFORD HOSPITAL, SAN FRANCISCO

Eye Conference. Each Monday morning.

Didactic Course in Ophthalmology. Monday and Wednesday, 7 to 8:30 p.m.

What's New in Gastroenterology. Saturday, March 26, 9 a.m. to 5 p.m.

Office Gynecology. Saturday, April 9, 9 a.m. to 5 p.m.

Course on Keratoplasty for Specialists in Ophthalmology. Wednesday through Friday, May 18 through 20.

Postgraduate Conference in Strabismus. Wednesday through Friday, July 13 through 15.

Contact: Arthur Selzer, M.D., program committee chairman, San Francisco-Stanford Hospital, Clay and Webster Sts., San Francisco 15.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Residents and interns of Los Angeles County, and all armed forces medical personnel admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Dermatology Clinic, One-Day Symposium. Thursday, March 24. Seven hours. Fee: $25.00.

Symposium on Hypertension. Friday, April 1. Seven hours. Fee: $10.00.

Funduscopy in Internal Medicine. Every other Tuesday, April 5 through June 14. Twelve hours. Fee: $37.50.

Ward Walks in Rare Diseases. Thursdays, April 14 through June 16. Twenty hours. Fee: $100.00.

Hawaii Course: The USC School of Medicine will offer the Third Postgraduate Refresher Course to be held in Honolulu and on board the S.S. *Lurline* from August 4 to August 20, 1960. (As a time and money saver, round trip air travel is also possible August 4 to August 14.)

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

CLINICAL TRAINEESHIPS available in all clinical departments by arrangement with the Postgraduate Division and the chairman of the department or departments involved. Eighty hours minimum. Fee: As arranged.

Diseases of the Chest: Two and four-week Traineeships in cooperation with the Los Angeles County Hospital. Dates as arranged.

Anesthesia. Monday through Friday. Dates as arranged. Six months. Fee: $350.

SPECIAL SKILLS available in the clinical departments, usually with a maximum of two or three students.

Surgical Anatomy: Head and Neck, April 20 through June 1, 63 hours. Fee: $75.00.

Surgical Anatomy: Head and Neck, April 20 through June 1. Twenty-four hours. Fee: $35.00.

TROPICAL PUBLIC HEALTH: Causes, treatment and management of diseases found in the warm climates. For physicians who plan to serve abroad and other ancillary personnel. Monday through Friday, April 1 through May 30. Fee: $65.

JOINT MANIPULATION. Monday through Friday, 8:00 to 12:00, dates to be arranged. Twenty hours. Fee: $75.00.

For information contact: G. E. Norwood, M.D., assistant dean and chairman, Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

*Fees to be announced.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

POSTGRADUATE INSTITUTES—1960
(Tenth Anniversary Year)

North Coast Counties in cooperation with College of Medical Evangelists, March 31 and April 1. Flamingo Hotel, Santa Rosa. *Chairman:* H. Ward Wick, M.D., 858 Fourth Street, Santa Rosa.

Southern Counties in cooperation with Stanford University School of Medicine, April 21 and 22. Palm Springs Riviera. *Chairman:* Robert M. Zweig, M.D., 7004 Magnolia, Riverside.

San Joaquin Valley Counties in cooperation with University of Southern California School of Medicine, April 28 and 29. Ahwahnee Hotel, Yosemite. *Chairman:* Campbell H. Covington, M.D., 2057 High Street, Selma.

Sacramento Valley Counties in cooperation with UCLA School of Medicine, July 1 and 2. Tahoe Tavern, Lake Tahoe. *Chairman:* Herbert W. Korngold, M.D., 1217 30th Street, Sacramento.

Contact: One of the chairmen listed above, or Postgraduate Activities Office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

* * *

AUDIO-DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

MARCH MEETINGS

PIONEERS MEMORIAL HOSPITAL MEDICAL STAFF in association with the University of Oklahoma School of Medicine, Tenth Annual Postgraduate Assembly. March 18 and 19. Pioneers Memorial Hospital, Brawley. *Contact:* George C. Holleran, M.D., program chairman, P. O. Box 159, Brawley, Calif.

ALAMEDA COUNTY TUBERCULOSIS, HEART AND CANCER ASSOCIATIONS, "A Practical Approach to Current Clinical Problems." March 23, 1:30 to 5:30. Highland Hospital Auditorium, Oakland. *Contact:* Joseph Ross, M.D., committee chairman, 1916 Franklin St., Oakland.

STANFORD UNIVERSITY SCHOOL OF MEDICINE, Santa Clara County Heart Association and San Mateo County Heart Association Fourth Annual Symposium on Cardiovascular Disease. March 24. 8:30 a.m. to 5 p.m. Physics Lecture Hall, Lomita Drive, Stanford University. *Contact:* Mr. John Blum, San Mateo County Heart Association, 181 Second Avenue, San Mateo, or Mrs. Mabel Weyland, Santa Clara County Heart Association, 461 Porter Building, San Jose.

SAINT JOSEPH HOSPITAL, BURBANK, Annual Medical Assembly. March 25 and 26, 9 to 5 p.m. Saint Joseph Hospital Auditorium, 501 S. Buena Vista, Burbank. *Contact:* R. Straus, M.D., program chairman, St. Joseph Hospital, 501 S. Buena Vista, Burbank, THornwall 8-5531, Ext. 305.

AMERICAN SOCIETY OF MAXILLOFACIAL SURGEONS, Ambassador Hotel, Los Angeles. March 27 to 31. *Contact:* Arthur E. Smith, M.D., chairman and local arrangements committee, 1930 Wilshire Blvd., Los Angeles 57.

INTERMOUNTAIN PEDIATRIC SOCIETY, Stardust Hotel, Las Vegas, Nevada. March 28 and 29. *Contact:* Joseph R. Newton, M.D., publicity chairman, 2000 S. 9th East, Salt Lake City, Utah.

SOUTHWESTERN SURGICAL CONGRESS. March 28 through 31, Riviera Hotel, Las Vegas, Nevada. *Contact:* Miss Mary O'Leary, executive secretary, 1213 Medical Arts Building, Oklahoma City, Oklahoma.

NEUROSURGICAL SOCIETY OF AMERICA. March 30 through April 2, Del Monte Lodge, Del Monte. *Contact:* Raymond K. Thompson, M.D., secretary, 803 Cathedral Street, Baltimore 1.

APRIL MEETINGS

AMERICAN SOCIETY OF INTERNAL MEDICINE. April 1 through 3. Palace Hotel, San Francisco. *Contact:* Mr. Robert L. Richards, executive director, 350 Post Street, San Francisco 8.

AMERICAN COLLEGE OF PHYSICIANS Annual Meeting, April 4 through 9. Civic Auditorium, San Francisco. *Contact:* Edward C. Rosenow, Jr., M.D., executive director, 4200 Pine Street, Philadelphia 4.

SEVENTH ANNUAL FORT MILEY MEDICAL CLINICS AND SYMPOSIA, sponsored by San Francisco Academy of General Practice in cooperation with faculties of Stanford and U. C. Schools of Medicine. Tuesday nights, April 12 through May 17, 8 p.m., Ft. Miley Veterans Administration Hospital, 42nd Avenue and Clement Street, San Francisco. Registration fee: Members $15, nonmembers $20. *Contact:* Robert A. Major, M.D., chairman, 2299 19th Avenue, San Francisco 16.

HARVEY CUSHING SOCIETY. Fairmont Hotel, San Francisco. April 13 through 17. *Contact:* Edmund J. Morrissey, M.D., 450 Sutter Street, San Francisco 8.

CALIFORNIA MEDICAL ASSISTANTS ASSOCIATION Annual Convention. April 23 and 24. Claremont Hotel, Berkeley. *Contact:* Mrs. Anne Reece, president CMAA, 1837 So. Indiana St., Porterville, California.

VALLEY CHILDREN'S HOSPITAL Spring Clinics. April 28 to 30. Roosevelt High School Auditorium, Fresno. *Contact:* Valley Children's Hospital, Shields and Millbrook Avenues, Fresno.

TB AND HEALTH ASSOCIATION, Los Angeles County Workshop on Techniques of Teaching Chest Disease. Jonathan Club, Los Angeles. April 30, 8:30 a.m. to 5 p.m. *Contact:* Mr. Richard Gaines, staff coordinator, 1670 Beverly Blvd., Los Angeles 26.

MAY MEETINGS

PAN AMERICAN MEDICAL ASSOCIATION CONGRESS. May 2 to 11. Mexico City. *Contact:* Joseph J. Eller, M.D., director general, 745 Fifth Avenue, New York, N. Y.

LOS ANGELES COUNTY HEART ASSOCIATION Annual Meeting. Biltmore Bowl, Los Angeles—Luncheon, 12:00 noon. Wednesday, May 4. *Contact:* Chauncey A. Alexander, executive director, 2405 West 8th St., Los Angeles 57.

MEMORIAL HOSPITAL OF LONG BEACH Medical Staff 2nd Annual Scientific Symposium "New Horizons in Medicine," to be held in conjunction with the formal opening of the new 400-bed Memorial Hospital of Long Beach. May 4. *Contact:* George X. Trimble, M.D., director of medical education, Seaside Memorial Hospital, 1401 Chestnut Avenue, Long Beach 13.

STUDENT AMERICAN MEDICAL ASSOCIATION, Statler-Hilton Hotel, Los Angeles, May 5 through 8. *Contact:* Mr. R. F. Staudacher, executive director, 430 N. Michigan, Chicago 11.

NEVADA ACADEMY OF GENERAL PRACTICE 1960 Annual Assembly. May 12 through 14. Riverside Hotel, Reno, Nevada. Scientific program by University of California School of Medicine. *Contact:* Roy M. Peters, M.D., general chairman, 475 So. Arlington, Reno, Nevada.

HAWAII MEDICAL ASSOCIATION Annual Meeting. May 12 through 15. *Contact:* Miss Lee McCaslin, executive secretary, 510 S. Beretania, Honolulu 13.

NATIONAL TUBERCULOSIS ASSOCIATION—AMERICAN TRUDEAU SOCIETY Annual Meeting. May 16 through 19. Statler Hilton and Biltmore Hotels, Los Angeles. *Contact:* Mr. Sherman Asche, general chairman, Annual Meeting Committee, P. O. Box 4037, Santa Barbara.

AMERICAN COLLEGE OF NUTRITION 1960 Annual Convention. May 20 through 22. Huntington Sheraton Hotel, Pasadena. *Contact:* Donald B. Haynie, executive secretary, 10651 West Pico Blvd., Los Angeles 64.

CALIFORNIA HEART ASSOCIATION Annual Meeting and Scientific Session. May 20 through 22. Claremont Hotel, Berkeley. *Contact:* J. Keith Thwaites, executive director, 1428 Bush Street, San Francisco 9.

LONG BEACH SURGICAL SOCIETY Annual "Clinic Day." May 21. Lafayette Hotel, Long Beach. 2 p.m. to 9 p.m. *Contact:* Harriman Jones, M.D., secretary-treasurer, 211 Cherry Ave., Long Beach 2.

SUMMER AND FALL MEETINGS

GERONTOLOGICAL SOCIETY, INC., Mark Hopkins Hotel, San Francisco. August 7 through 12. *Contact:* Mrs. Marjorie Adler, administrative secretary, 660 S. Kingshighway Blvd., St. Louis 10.

RENO SURGICAL SOCIETY 10th Annual Conference. August 18, 19 and 20. The Mapes Hotel, Reno. *Contact:* Harry B. Gilbert, M.D., 275 Hill Street, Reno, Nevada.

AMERICAN ASSOCIATION OF BLOOD BANKS, Jack Tar Hotel, San Francisco. August 21 through 26. *Contact:* John B. Alsever, M.D., secretary, 1211 W. Washington St., Phoenix, Arizona.

AMERICAN HOSPITAL ASSOCIATION, Civic Auditorium, San Francisco. August 27 through September 1. *Contact:* Mr. Maurice J. Norby, assistant director, 18 E. Division St., Chicago.

PACIFIC DERMATOLOGIC ASSOCIATION INC. 12th Annual Meeting. Empress Hotel, Victoria, British Columbia. September 2 through 4. *Contact:* Edward Ringrose, M.D., secretary, 2636 Telegraph Ave., Berkeley.

NEVADA STATE MEDICAL ASSOCIATION Annual Meeting. September 7 through 10. Stardust Hotel, Las Vegas. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 2790, Reno, Nevada.

POSTGRADUATE ASSEMBLY OF SAINT JOHN'S HOSPITAL. September 8 through 10. 9 a.m. to 4 p.m., St. John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting, Yosemite. September 23, 24 and 25. *Contact:* Barbara E. Oulton, executive secretary, 350 Post St., San Francisco 8.

PAN-PACIFIC SURGICAL ASSOCIATION 8th Intensive Surgical Congress, embracing all Surgical Specialties. September 28 through October 5. Honolulu, Hawaii. *Contact:* F. J. Pinkerton, M.D., director general, Suite 230, Alexander Young Building, Honolulu 13.

AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA. Coronado Hotel, San Diego. October 5 through 7. *Contact:* William T. Fitts, Jr., M.D., secretary, 3400 Spruce St., Philadelphia 4.

SAN FRANCISCO HEART ASSOCIATION 30th Annual Postgraduate Symposium on Heart Disease. October 5 through 7. St. Francis Hotel, San Francisco. *Contact:* Mr. Lawrence I. Kramer, Jr., executive director, 259 Geary St., San Francisco 2.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION combined Meeting with 4th Western Industrial Health Conference. October 7 through 9. Jack Tar Hotel, San Francisco. *Contact:* Verne G. Ghormley, M.D., president, 3032 Tulare Street, Fresno 21.

AMERICAN COLLEGE OF SURGEONS, 46th Annual Clinical Congress, San Francisco. October 10 to 14. *Contact:* William E. Adams, M.D., secretary, 40 E. Erie St., Chicago 11.

KAISER FOUNDATION HOSPITALS IN NORTHERN CALIFORNIA Fourth Annual Symposium on Human Genetics. October 14 and 15. Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., Director of Medical Education, 280 West MacArthur Blvd., Oakland.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 11th Annual Scientific Assembly. October 16 through 19. Masonic Memorial Temple, San Francisco. *Contact:* William W. Rogers, executive secretary, 461 Market St., San Francisco 5.

WESTERN ORTHOPEDIC ASSOCIATION Annual Convention. October 22 through 27. Hotel Del Coronado, Coronado. *Contact:* Mrs. Vi Mathieson, executive secretary, 354 21st St., Oakland 12.

ST. JUDE HOSPITAL—FULLERTON 2nd Annual Postgraduate Assembly. October 27 and 28. St. Jude Hospital. *Contact:* B. L. Tesman, M.D., chairman, St. Jude Hospital, Fullerton.

AMERICAN SCHOOL HEALTH ASSOCIATION, San Francisco. October 30 through November 4. *Contact:* A. O. DeWeese, M.D., executive secretary, 515 E. Main St., Kent, Ohio.

AMERICAN PUBLIC HEALTH ASSOCIATION, San Francisco. October 31 through November 4. *Contact:* Berwyn F. Mattison, M.D., executive director, 1790 Broadway, New York 19.

THE PHYSICIAN'S *Bookshelf*

JEWISH MEDICAL ETHICS—A Comparative and Historical Study of the Jewish Religious Attitude to Medicine and Its Practice—Rabbi Dr. Immanuel Jakobovits. Philosophical Library, Inc., 15 East 40th Street, New York, N. Y., 1959. 381 pages, $6.00.

The author, a very talented rabbi, has done considerable, painstaking research in preparing this volume. Religion and medicine have been in alliance with each other throughout the entire course of recorded human history. This partnership of religion and medicine has not always been holy or healthy. The fields of medical ethics covered by Jewish law are wider and more numerous than the comparative material provided by the Christian and Moslem faiths. All faiths are concerned with the art of healing, the recourse to prayer and the moral responsibilities of the physician. The attitude to medicine, human healing versus Divine Providence, is discussed carefully.

Definition of dangerous diseases and concessions and restrictions for the patients are enumerated. Ethical concessions for the sick and moral considerations in the saving of human life are emphasized. Holy Writ tells us "that man is obliged to fulfill his duties toward his neighbor in the same way as he must discharge his debt to Heaven." In contrast to the jurisprudence of the Romans, Jewish law does not know of any division between legal law and moral law in its principles or administration.

A chapter discussing the dead and their treatment is described. The Talmud directs the performing of a cesarean section on a woman who died during childbirth in the hope of delivering a viable child. The Talmud does not make any references to the treatment of infectiously diseased corpses and their disposal. The first frank reference to a post mortem examination dates back to 1286, as far as the Church is concerned. On the other hand the Talmud shows "serious discussion on scientific method and the planning of an experiment in dissection of a human body." The Mishnah details the list of human bones very accurately and this could only have been obtained through a post mortem examination.

The attitude to pain in human beings and in animals is given considerable consideration. In the Jewish faith compassion both for human beings and animals is stressed. The vast subjects of Euthanasia, dissection, abortion, artificial insemination, sterilization, and therapeutic contraception are all treated in the light of eternal truth, whose authentic source is the Bible.

Prophylactic hygiene, circumcision, sexual hygiene and sexual relations and their effect on eugenics are all carefully described.

The laws dealing with the Sabbath, forbidden foods, laws of ritual slaughter, preparation of the meat and rules for all meals are analyzed.

Churchmen in all ages including the present, recoil from the idea of defeating Providence or thwarting the divine vengeance for sin. This outlook caused ecclesiastical condemnation of the pioneering efforts in plastic surgery in the sixteenth century; it induced Pope Leo XII to ban the use of condoms against syphilis in 1836; there was opposition to Simpson's use of chloroform to ease pains of childbirth and everyone was concerned and disturbed by Ehrlich's discovery of salvarsan for the treatment of syphilis. The author brings all these points out very vividly with the necessary biography and references to substantiate each point in question. Discussion is brought out on faith cures, and the acts of healing wrought by Jesus and in the Apostolic age.

The evolution of medicine from a primitive fight against evil spirits, demons, witches and astrological omens into a rational science was a long and tedious process. Neither Egypt nor Greece, the two homes of rational medicine, had any influence on the scientific outlook of the Talmud. The Talmud retained the biblical hostility to superstition.

This book is written in a very interesting and stimulating manner. Good health today depends on far more than medical progress. I would indeed recommend this volume to be read not only by the medical profession but by laity as well.

ABRAHAM BERNSTEIN, M.D.

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THE MEGALOBLASTIC ANEMIAS—Modern Medical Monographs 18—Victor Herbert, M.D., Research Assistant in Hematology, The Mount Sinai Hospital, New York. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1959. 162 pages, $6.00.

In this very readable little volume, the author reviews the literature and his experience with some 200 cases of megaloblastic anemia. The material is presented in terms of hematologic morphology, the clinical picture, differential diagnosis, therapy and particularly, etiologic classification on the basis of vitamin B_{12} and/or folic acid deficiency.

He stresses the importance of ovalmacrocytes and the "right shift" in polymorphonuclear leukocyte lobulation as an early finding. While detection of macrocytosis in the peripheral blood or giant metamyelocytes or megaloblasts in the marrow early may be a problem, even for the hematologist, an increase in four and five lobed PMN's and the presence of six lobed PMN's should be picked up by most technicians. In the absence of folic acid administration, he noted no neuropathy of B_{12} deficiency without a "right shift" or macroovalocytes.

In regard to the treatment of pernicious anemia, admitting that up to 98 per cent of 1,000 microgram doses of B_{12} are excreted in the urine, he presents little evidence to support his recommendation of these 1,000 microgram injections of B_{12} for initial and maintenance therapy.

The photomicrographs are poor but no worse than any other attempt to picture a megaloblastic marrow. Typographical errors are lacking, but one wonders about "Asiatic Type" spinal cord change (page 71). The material is clearly, critically and concisely presented. Subject matter is arranged for easy reference, and the index is good. The bibliography is extensive, over 600 references, and up to date (1959). It is highly recommended.

PHYSIOLOGY OF THE EYE—Clinical Application—Third Edition. Francis Heed Adler, M.A., M.D., F.A.C.S., William F. Norris and George E. de Schweinitz, Professor of Ophthalmology, University of Pennsylvania School of Medicine; Consulting Surgeon, Wills Hospital, Philadelphia. The C. V. Mosby Company, St. Louis, Mo., 1959. 790 pages, $16.00.

Adler's Physiology of the Eye was published in 1950, and since its first edition, has become the outstanding book on this field of ophthalmology. It has been stated that if a candidate for the American Board of Ophthalmology Examinations were to be limited to one volume for his preparation, it should be this book.

In the preface to the first edition Adler stated that if the ophthalmologist is to treat the diseases of the eye adequately, he must know how the various portions of the eye normally function. For example, in the treatment of glaucoma, it is necessary to understand the formation and elimination of the aqueous humor, the permeability characteristics of the cornea and the hydrodynamics of the ocular circulation. In his first edition he took the recent findings of the physiology of the eye as found in the experimental laboratory and applied these facts clinically. This general plan was used throughout the book and accounts for its immediate acceptance in this field. The second edition was published in 1953.

The research in the field of physiology has been tremendous since the second edition of the book was published. In this, the third edition, Adler has made a very careful evaluation of the work done since that time. This has meant extensive revision of some portions of the book, as, for example, the chapters on aqueous humor and intraocular pressure. The chapter on ocular muscles has been entirely rewritten. This chapter also contains eight pages on the electromyography of the ocular muscles. All the recent advances in physiology of the eye as based on both laboratory findings and clinical observation have been incorporated in this new edition.

The book contains 56 more pages than the previous edition and has 43 more illustrations and is beautifully and instructively illustrated. There are excellent key references at the end of each chapter. The format, paper and illustrations leave nothing to be desired. There is an excellent 10-page index.

This newly revised and partly rewritten edition is a must for every ophthalmologist who is attempting to keep abreast with the rapidly changing concepts of the physiology of the eye. These changes are important factors in the better clinical care of the diseases of the eye.

FREDERICK C. CORDES, M.D.

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CLINICAL AUSCULTATION OF THE HEART—Second Edition—Samuel A. Levine, M.D., Sc.D. (Hon.), F.A.C.P., Clinical Professor of Medicine, Emeritus Harvard Medical School; Consultant in Cardiology, Peter Bent Brigham Hospital, Boston; Consultant Cardiologist, Newton-Wellesley Hospital; Physician, New England Baptist Hospital; and W. Proctor Harvey, M.D., Associate Professor of Medicine, Georgetown University School of Medicine and Director, Division of Cardiology, Georgetown University Hospital; Consultant in Cardiology, Walter Reed Army Medical Center, Bethesda Naval Hospital. W. B. Saunders Company, Philadelphia, 1959. 657 pages, 660 illustrations. $11.00.

One is first impressed with the size of this volume. There are 657 pages and it is more than twice the size of the first edition published ten years ago. All of this is an indication that the old art of auscultation has advanced along with newer and more complicated methods for the study of heart diseases. Much of its growth is due to new material about congenital heart disease but there is also much new material in all fields.

The authors have followed the plan and purpose of the first edition. It is, as the title states, a book concerned with clinical auscultation of the heart, not a book about phonocardiography. Auscultatory findings are described and illustrated with phonocardiograms. With the description there is also an account of measures which help in eliciting certain physicial findings. These descriptions, which must for the most part come from the lifetime experience of the senior author, and especially from his interest in physical examination of the heart, are one of the valuable features of the text. The reader, if he has not previously done so, will find phonocardiograms easy to interpret as illustrations of sounds and murmurs, and ideally suited for this purpose.

The volume is well arranged with chapters on the heart sounds, arrhythmias and cardiac murmurs. There is a final chapter on miscellaneous auscultatory findings which includes topics which do not fit into the previous chapters, as well as some examples of bizarre sounds and murmurs. The index, with a few trials, seemed awkward to use, but there is a simple, well arranged table of contents which will almost always lead one at once to the desired subject.

No grounds were discovered for serious criticism of any part of the book. Everything of importance in the field of auscultation seems to have been included. Perhaps the reader would benefit from a more critical discussion of the origin of the heart sounds. Most of the illustrations are excellent but a few have been reduced in size in the process of reproduction to the point where they are almost unreadable. One might also wish to read more about the phonocardiograph and its uses. Probably its most valuable use is the use the authors have made of it, but phonocardiography has come of age, and there are some situations where it can give more important information than more complicated methods of diagnostic study. One also hopes that the authors in planning for the next edition will consider extending the scope of the book to include illustrations of the other simple methods of cardiac examination, inspection and palpation, with graphic records of the venous pulse and movements of the precordium.

Everyone interested in examinations of the heart will find something useful in this book. The medical student, once he has made a beginning in the art of auscultation, will profit by referring to it for additional information on specific topics, and the accomplished cardiologist is quite certain to discover new information.

JOHN K. LEWIS, M.D.

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ANESTHESIA FOR INFANTS AND CHILDREN—Robert M. Smith, M.D., Anesthesiologist, The Children's Medical Center, Boston, Mass.; Assistant Clinical Professor of Anesthesia, Harvard Medical School; Consultant in Anesthesia, U. S. Naval Hospital, Chelsea, Mass., and Lemuel Shattuck Hospital, Jamaica Plain, Mass. Foreword by Robert E. Gross, M.D. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo., 1959. 418 pages, with 182 illustrations, $12.00.

This is an excellent, conservative treatise which covers the field of pediatric anesthesia in a concise lucid manner.

Essential physiology and pathological processes with the differences between infants and adults are clearly and logically described. Equipment and choice of anesthetic agents and methods are presented in detail for the entire field of pediatric anesthesia as are preoperative preparation, fluid therapy and blood replacement.

The entire book is well organized and can be recommended to all interested in the surgical care of infants and children. It should be required reading for all residents in anesthesiology and of value to all anesthesiologists not specializing in pediatric anesthesia.

CHARLES F. MCCUSKEY, M.D.

PSYCHOPATHY—A Comparative Analysis of Clinical Pictures—Carl Frankenstein, Ph.D., Associate Professor of Special Education, The Hebrew University, Jerusalem. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, New York, 1959. 198 pages, $6.75.

This book deals with a complex and controversial category of human behavioral disturbance which the author designates "psychopathy" but which has been called by other names also. Dr. Frankenstein defines psychopathy as "constitutional inability to establish objective (positive as well as negative) relationships and effective human ties or as a constitutional deficiency in volition and emotion (in contradistinction to intellectual deficiencies)." He further describes it as demonstrating "lack of identification; a poorly defined ego concept; a tendency to mirror others in behavior; absence of superego awareness, of anxiety, of guilt feelings and of neurotic reactions to conflict or frustration; shallowness of fantasy material; lack of concern for objective facts; weakness of the time concept; . . . moral indolence, often leading to brutal crime; lack of control over sexual and/or material desires; hysterical fanaticism, seemingly for the sake of a truth, a principle, an idea, but actually reflecting an insatiable need to be the center of attention, admiration or fear; the same need producing the well known swindler and imposter type . . .; narcissistic excitability; or almost unlimited seducibility."

The book treats this area of disturbance primarily from a descriptive and phenomenological basis, but with some discussion of dynamics of the personalities involved; the only reference to treatment is the opinion that treatment is impossible because of the constitutional quality of the disturbance. Psychopathy is described and discussed more from the frame of reference of Jungian psychological theory than from that of any other particular school. After the preliminary discussion and classification of types of psychopathy, the great bulk of the book is taken up with a comparison of the author's concept of psychopathic disturbance with other kinds of psychological disturbance of a similar kind, as well as with disturbances of a grossly dissimilar nature.

The first line in the preface to the book is, "This book is a study in clinical semantics." The balance of the book bears out this warning. Physicians, and most psychiatrists, will probably find this book difficult and slow reading, because of relatively unfamiliar terminology, apparent coinage of new words and phrases and an abstruseness of language which often obscures more than it clarifies. Although it is the opinion of this reviewer that the language usage of the book is a disservice to its content, this statement is made with the recognition that a new frame of reference often requires new terms and language structure. It is speculative, rather than a logically based judgment, that the material could have been presented more clearly.

The author approaches a difficult and involved task in his attempt to integrate the phenomenology of psychopathic disorders, and the book represents a courageous attempt to perform this task. Whether the theoretical formulations are correct or, indeed, whether they can be easily validated, does not seem to be the crucial issue. The book presents psychopathy in a somewhat integrated frame of reference which is at least somewhat susceptible to attempts at clinical proof or disproof and is of value for this reason. The author stresses the "time concept," in discussing dynamics and this emphasis seems a welcome addition to dynamic concepts. He makes the point more emphatically than it is usually made that particular kinds of interpersonal relationships and interaction are not necessarily identical unless one can demonstrate that they occur at identical periods in the development of the individual. In other words, a problem of maternal rejection is not the same to a child of one month as to a child of one year or a child of ten or a child of fifteen. Though this seems truistic, it is too often ignored in psychodynamic literature.

All in all, the book appears a valuable addition to the literature on psychopathy despite its semantic acrobatics and it is to be recommended for the interest of its point of view to all those interested in this type of disturbed behavior.

D. A. SCHWARTZ, M.D.

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THE CARE OF MINOR HAND INJURIES—Adrian E. Flatt, M.A., M.D., F.R.C.S., Assistant Professor of Orthopedic Surgery, State University of Iowa, Iowa City, Iowa. With foreword by Carroll B. Larson, M.D. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo., 1959. 266 pages, illustrated, $9.50.

This book is a guide for those practitioners who have had limited experience in treating hand injuries. Furthermore, the text is meant to cover those injuries which Dr. Flatt feels are amenable to out-patient care.

The first of two sections includes four chapters on general principles of minor hand surgery. Topics which are briefly but lucidly discussed are functional anatomy, surgical techniques peculiar to this field, preoperative and postoperative suggestions, as well as methods of examination and classification of injuries.

Specific injuries are dealt with in the following eleven chapters. The methods of treatment are those which the author has personally found to be safe and practical. The text, selection of photographs and drawings are generally excellent.

However, several illustrated plastic maneuvers are beyond the scope of minor surgery. These include dorsal rotational flaps and volar transpositional flaps which will be regarded by some as unacceptable as here described and illustrated.

Fortunately, in the chapter on pulp loss, the pitfalls of thenar flaps are well depicted. The uninitiated will thus leave them for the expert to utilize in exceptional circumstances. A formal discussion on handling of the volar digital nerves would be helpful since many stumps are crippling because the average surgeon is frequently not cognizant of these two troublesome structures.

It is felt that the practitioner may be frustrated if he attempts to treat the common mallet finger by the conservative method, using a plaster cast as illustrated. An alternate means of splinting is not shown. Though the text on fractures is good, here again more illustrations in the actual use of splints is desirable.

In this rather limited and specialized field a book of this type is a definite asset. The industrial surgeon, generalist, and orthopedic surgeon will find it useful. It is readable, well organized, and recommended to those interested in hand surgery.

ROBERT L. BROWN, M.D.

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DOCTOR'S LIFE OF JOHN KEATS, A—Walter A. Wells, M.D. Vantage Press, Inc., 120 W. 31st Street, New York 1, New York, 1959. 247 pages, $3.95.

Under this title as justification Dr. Wells has done a rather poor biography of the great poet. The style is jerky, the material not well organized, the digressions numerous and often tedious, and through this Keats wanders like a shadow which never becomes very real. Even the account of Keats' illness is packed with extraneous matter and the philosophical reflections on the mystery of genius which follow are at times far-fetched. One doubts whether this book adds much to the literature on Keats.

ARTHUR L. BLOOMFIELD, M.D.

SOIL, GRASS AND CANCER—Health of Animals and Men Is Linked to the Mineral Balance of the Soil—André Voisin, Membre de l'Académie d'Agriculture de France; Chargé d'Enseignement à l'École Nationale Vetérinaire d'Alfort (Paris). Translated from the French by Catherine T. M. Herriot and Dr. Henry Kennedy, Secretary, Irish Agricultural Organisation Society Ltd. Philosophical Library Inc., 15 East 40th Street, New York 16, N. Y., 1959. 302 pages, $15.00.

There is an old French saying that "we are what we eat." The author of this book, a member of the French Academy of Agriculture and the staff of the National Veterinary College in Paris, goes a step further. He believes that the control and prevention of cancer lies in a better understanding of human nutrition, especially as it pertains to mineral metabolism. However, most of his statements are speculative, and few data are provided clearly relating mineral deficiencies in the soil with spontaneous cancer in humans.

Nevertheless, since we do not know all the causes of cancer, and since there is perpetual exhortation to return to the grass roots, the author's reputation for producing the most highly productive methods of grassland management must be noted. Indeed, it was while working at his agricultural pursuits and watching his cows eat grass that "the scientific philosophy embodied in this work evolved."

He believes that the carcinogenic effects of tobacco can be reduced by a suitable diet. Indeed, he opines that the more rapid development of cancer among smokers today is due to alterations in our diet which has thus become less protective. "Exhortations to give up tobacco smoking are hardly likely to have any more effect than sermons on virtue, so the hopes of man must be placed on improving the protective characteristics of the diet." A simple step would be substituting whole wheat for white bread.

Correlations of geographic soil conditions and gastric cancer are recorded in some detail. By improving the soil, by adjusting the amount of estrogens fed to animals, the amount of insecticides sprayed on fruit and vegetables, and other allied steps he thinks progress will be made.

There is a foreword by Dr. Allan Fraser who expresses sympathy with Mr. Voisin's speculative views *because*, while the French colleague was watching over cows in France, he was watching over sheep in Scotland. Like a good Scotsman, this same foreworder terminates his piece with the sentence "I should be guilty of hypocrisy were I not to confess that I still find the hypothesis just a little too simple to be altogether true." This reviewer tends to concur.

L. H. GARLAND, M.B.

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HANDBOOK OF POISONING: DIAGNOSIS AND TREATMENT—Second Edition—Robert H. Dreisbach, M.D., Ph.D., Professor of Pharmacology, Stanford University School of Medicine, Lange Medical Publications, Los Altos, 1959. 474 pages, $3.50.

This new edition is changed so little from the first edition that the extra cost of making the few changes seems scarcely justified. However, a few valuable changes have increased the usefulness of this already useful handbook. First may be mentioned the summary of instructions for first aid measures to be telephoned by the physician, printed on the inside of the cover and the adjacent fly-leaf. Second, the darker type, with black-faced headings makes reading and finding desired information easier and thus facilitates managing emergency situations. Another noteworthy addition is the section on diagnosis and treatment of electrolyte imbalance, found so often with prolonged vomiting, diarrhea or water and food deprivation.

Since this work is an emergency handbook and not a textbook, it is questionable whether so much space should be given to chemical formulas and to pictures of the many types of resuscitation equipment. The physician is not interested in the chemical structure of a toxic agent when confronted with a case of poisoning and he will not have an opportunity to select the most appropriate resuscitation apparatus. If justified at all in a book on poisoning, it would be better to include these in a classroom textbook or a more academic treatise.

This flexible-backed, pocket size book of six sections, 37 chapters and 467 pages is organized in an unusual way; the poisons are grouped largely according to use, as Pesticides, Industrial Hazards, Household Chemicals, Medicinal Chemicals and Plant and Animal Hazards. The arrangement within each class seems to be based upon frequency or seriousness of poisoning, but this plan is not rigidly followed, and for this reason the sequence is somewhat haphazard. The first section includes excellent outlines of Emergency Management, Diagnosis, Supportive Management, Prevention and Physician's Legal and Medical Responsibility. Chapter 2 on Diagnosis and Evaluation of Poisoning is an outline based upon the classical method for examination of the patient: History, including occupational and other types of exposure; Symptom History, arranged according to physiological systems; Physical Examination and Laboratory Examination.

The author, a well trained pharmacologist, is obviously experienced in diagnosis and management of poisoning, and has been fortunate in having his academic office and laboratory adjacent to a teaching hospital. He is to be commended for preparing this practical handbook.

CLINTON H. THIENES, M.D.

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MEDICAL MANAGEMENT OF THE MENOPAUSE (Modern Medical Monographs 17)—Minnie B. Goldberg, M.D., Associate Clinical Professor of Medicine, University of California School of Medicine; Consultant in Medicine and Endocrinology, Mount Zion Hospital; Attending Staff Physician in Endocrinology, Children's Hospital, San Francisco, Calif. Grune & Stratton, 381 Fourth Avenue, New York 16, N. Y., 1959. 98 pages, $4.50.

The major emphasis of this book, as the title implies, is on therapy. Although treatment includes reassurance, sedation and psychotherapy, gonadal steroidal substitution is required in approximately 50 per cent of women. Whether or not one believes in the liberal use of hormones in this situation the book contains a number of suggestions which most gynecologists would be reluctant to accept. Four such controversial statements are:

1. The author lists 38 symptoms as being menopausal in origin and therefore correctable by proper steroid therapy.

2. The use of "progestens" to achieve a "medical curettage" makes such agents useful in the management of the menopause.

3. The use of androgenic substances locally is beneficial at times and well worth a trial in patients with stress incontinence due to relaxation and atrophy of pelvic tissues.

4. The suggestion that parenteral estrogens be used to control menopausal symptoms in patients who are still menstruating.

This monogram is essentially a treatise representing the strong convictions of the author that steroid therapy is to the menopausal woman as insulin is to the diabetic. The stated purpose of the book is to aid "the young practitioner" who, because of conflicting teaching, may be bewildered by uncertainties in the diagnosis and management of the disturbances of the menopause. As such the reviewer suggests that one might modify the author's paraphrase of Lincoln's to better read "You may fool some of the young practitioners all of the time and all of the young practitioners some of the time, but you cannot fool all of the young practitioners all of the time."

DONALD L. HUTCHINSON, M.D.

SYNOPSIS OF GYNECOLOGY—Fifth Edition—Robert James Crossen, M.D., Associate Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine, St. Louis; Daniel Winston Beacham, M.D., Assistant Professor of Clinical Obstetrics and Gynecology, Tulane University School of Medicine; and Woodard Davis Beacham, M.D., Professor of Clinical Obstetrics and Gynecology, Tulane University School of Medicine. The C. V. Mosby Company, St. Louis, 1959. 340 pages, illustrated, $6.50.

This small volume is intended as a guide for students and general practitioners who require a knowledge of the principal facts and general principles of gynecology but not the detailed knowledge necessary for specialization. The emphasis is on the practical, in tests, methods of examination, and treatment. For the most part the management suggested is modern and generally acceptable. The first chapter furnishes an adequate outline of the anatomy and physiology of the female genitalia. The second chapter deals with gynecologic examination and diagnosis and is rather more detailed than the descriptions of diseases. It is a very satisfactory treatise with adequate illustrations and references. The subsequent chapters deal with Malformations, Diseases of the Vulva, (less than a page is devoted to vulval cancer), Diseases of the Vagina, Malpositions of the Uterus, Pelvic Infections, Benign Lesions of the Uterus, Malignant Lesions of the Uterus, Endometriosis, Ovarian Tumors, Complications of Pregnancy, Disturbances of Function, Infertility (four pages), Miscellaneous Disturbances (such as the climacteric, backache, and the breast) and a short section on Medicolegal Points in Gynecology.

As indicated above the views expressed seem sound enough though somehow the patient seems to lose her identity as a human being; the various diseases, tests and treatments seem to assume a rather detached character.

This is the kind of small book—it would fit easily into one's coat pocket—that should prove to be very popular with medical students.

DANIEL G. MORTON, M.D.

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SYSTEMIC LUPUS ERYTHEMATOSUS—A Mount Sinai Hospital Monograph—Editors George Baehr, M.D., and Paul Klemperer, M.D. Contributions to the Symposium by Members of the Staff of the Mount Sinai Hospital, New York. Grune & Stratton, 381 Fourth Avenue, New York 16, N. Y., 1959. 84 pages, $3.75.

This is an excellent coverage of a disease that is much more commonly recognized than previously. The pathology is well depicted. The discussion of the pathogenetic significance of the lupus erythematosus cell phenonemon is exceedingly good. There is, also, very good coverage of the clinical picture, including treatment. This constitutes one of the best sources of authoritative information on this subject with which this reviewer is familiar.

JOHN S. LAWRENCE, M.D.

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SYNOPSIS OF EAR, NOSE, AND THROAT DISEASES—Robert E. Ryan, B.S., M.D., M.S., (ALR), F.A.C.S.; Department of Otolaryngology, St. Louis University School of Medicine; Associate Otolaryngologist, St. John's Hospital, St. Louis; William C. Thornell, A.B., B.M., M.D., M.S. (ALR), F.A.C.S.; Assistant Professor, Department of Otolaryngology, Cincinnati College of Medicine, University of Cincinnati; and Hans von Leden, M.D., F.A.C.S., F.I.C.S.; Assistant Professor of Otolaryngology, Northwestern University Medical School, Chicago. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1959. 383 pages, illustrated, $6.75.

As stated in the title, this book is a symposium or digest of diseases of the ear, nose and throat, and as such covers the specialty very well. It is brief and concise. It is especially useful for reference for general practitioners; interns and lawyers, who deal with medical problems and any one interested in the subject.

It is written so clearly that anyone, medical men or the laity can comprehend it. Of course no details of surgical technique or complete medical treatment are given, as it is not designed for such coverage.

The 59 drawings are excellent and aid in making the text clear.

It is well written and is backed by the authors' vast amount of experience as practitioners and teachers.

It should be on the reference shelf of otolaryngologists and others interested in the subject.

LAWRENCE K. GUNDRUM, M.D.

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SURGEON AND THE CHILD, THE—Willis J. Potts, M.D., Surgeon in Chief, Children's Memorial Hospital; Professor of Pediatric Surgery, Northwestern University Medical School, Chicago. W. B. Saunders Company, Philadelphia, 1959. 255 pages, $7.50.

Dr. Willis J. Potts has written, in a beautiful manner, a textbook on the surgical problems of infancy and childhood. Basically, the book consists of the author's personal experiences and those of the staff of Children's Memorial Hospital of Chicago, reported in a conversational style, as he would tell it to you personally.

There is much on diagnosis, indications and contra-indications for surgery and a splendid chapter on the understanding of infants and children who are ill. Pre-operative and post-operative care are well presented. On the whole the book is adequately illustrated. There are no references and no attempt is made to review the previous literature on the various diseases.

Most of the subject matter concerns itself with the problems of congenital anomalies. There are excellent chapters on congenital atresia of the esophagus, undescended testicle, Hirschsprung's disease and most of the common problems due to developmental defects. The chapters dealing with respiratory problems in the newborn as well as infants and young children, and the congenital cardiovascular anomalies amenable to surgery are exceptionally well done.

This volume will be extremely helpful not only to surgeons dealing with surgical problems of infancy and childhood, but also to pediatricians, general practitioners, obstetricians and young physicians in training for special fields of surgery.

L. R. CHANDLER, M.D.

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PROGRESS IN HEMATOLOGY—Volume II—Leandro M. Tocantins, M.D., with 19 Contributors. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, New York, 1959. 290 pages, $9.75.

This book follows Volume I which appeared in 1956. All of the papers will be of interest to hematologists, although one wonders about the inclusion of a surgical paper on esophageal varices. A brief review of phase microscopy and cinematography in hematology by Bessis is well illustrated and of interest to all. There is a basic and excellent review of factors in the sickling phenomenon; also papers on the hematologic aspects of serotonin and lipid anticoagulants. For the pediatrician and pathologist, there are papers on Kernicterus and ABO Incompatibility. There is a review of platelet transfusion and Wilkinson's experience with Myleran in chronic myeloid leukemia. Bone marrow transplantation and radiation injury, humoral factors in erythropoiesis, blood preservation and transmission of leukemia are reviewed. For the most part the papers are well chosen, well written, up to date and timely. The book is highly recommended, and the reviewer looks forward to Volume III.